

MACMILLAN'S TEACHING IN PRACTICE

AN ENCYCLOPAEDIA OF MODERN METHODS
OF TEACHING IN THE PRIMARY SCHOOL
WRITTEN BY RECOGNISED AUTHORITIES
IN EDUCATION AND

EDITED BY

E. J. S. LAY

In seven volumes, with a Portfolio of 160 Class Pictures in full colour, and 8 additional Colour Plates containing thirty-two drawings to illustrate the Art Lessons. A most useful Reference Book to the pictures is issued with the Portfolio.

VOLUME SEVEN



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TWENTY TURNING POINTS IN ENGLISH HISTORY

This course of history covers the outstanding turning points in the story of England from the time of St. Augustine to the present day. The methods of presenting the stories are original and novel. There are conversations, personal accounts as told by imaginary eye-witnesses, vivid monologues and other devices which make the history live. This course is an alternative one to that in Volume IV for children in the last year of the Primary School.

I. SAINT AUGUSTINE AND THE MONKS



CHILDREN'S STORY

The hand on the Century Clock points to the year A.D. 597, the year when Pope Gregory sent

Saint Augustine with forty monks to teach the English about Jesus Christ. This was the first great turning-point in the history of England. The most famous people in the story are:

1. Gregory, a monk in Rome, who afterwards became the Pope, that is the father of the Christians.

2. Saint Augustine who with forty monks brought the Christian message to the Angles and Saxons.

3. Ethelbert, the king of Kent, who allowed Augustine and his followers to land and preach their message.

4. Bertha, a Christian princess from Gaul, who had become the queen of Ethelbert.

5. Edwin, king of Northumbria, who took for his queen a princess of Kent, and himself became a Christian.

6. Paulinus, a priest who preached the Christian message to Edwin and the people of Northumbria.

Many years before Gregory became Pope he had seen some English boys in the slave-market at Rome. He was greatly struck by their fair faces and asked questions about them. He was told that the children were Angles. "Not Angles but angels," he replied. He thought how sad it was that such angel-like children should know nothing of Christ, so he made up his mind that some day he would send missionaries to England. His chance came when he was made Pope. In the year 597 he sent St. Augustine and forty monks to Kent.

How the news of Augustine's mission might have been told in Rome.—"To-day our great Pope Gregory was able to carry out a plan which he has cherished ever since the days when he was only a priest. Forty monks, headed by his friend Augustine, set out to take Christianity to the land of the Angles and Saxons. This land, as is well known, is an island to the north-west of Gaul, and separated from it by a narrow channel.

The people of the island are a tall, strong race, with fair hair and blue eyes. They do not build fine cities as we Romans do, but prefer to live in wooden huts in large villages. They are heathens who worship many gods, in particular the war-god, Woden, who teaches them to hate and to kill.

We may readily understand that Pope Gregory has not found it easy to send missionaries there. It was difficult to find any willing to travel so far from their own land, and to risk losing their lives among the savage tribes. Moreover, the islanders were for a long time unwilling to receive them. Lately, however, there have been certain happenings which have decided His Holiness the Pope that now is the time to send his mission. The land is divided into many kingdoms, and one of the chief kings, Ethelbert of Kent, has married the Christian princess Bertha from Gaul, and he has allowed her to bring Christian priests with her into his kingdom. More than that, he has permitted his queen to have repaired a ruined British church, dedicated to St. Martin, which stands in his own capital of Canterbury. When the brave leader Augustine and his party reach Kent, they will thus have this church as a base from which to begin their work. The king is also willing, for the sake of his queen, to welcome the missionaries when they arrive and to hear what they have to say. Everything

seems favourable to their enterprise, and the thoughts of all of us go with them in their great adventure."

II

If you had been there.—Imagine that you are a Saxon thane living in Canterbury in the year 597. Here is an account of the meeting of Saint Augustine and King Ethelbert as you might have told it:

"There have been strange happenings in Canterbury lately. Augustine, the Christian priest from Rome, has arrived here with forty other men, monks they call them, who wear black robes with hoods. The king promised to receive them for his queen's sake, but lest they should use magic against him, he received the strangers in the open air, where magic is harmless. The king sat waiting for them on a hilltop under a spreading tree, with his thanes gathered about him. It was a striking scene to watch the procession of black-robed men slowly ascend the hill, singing as they came. At the head walked two men, one carrying a great silver cross and the other a banner on which was a painting of their Master. Behind these two came Augustine, a tall dark man, dressed like the rest in a black gown with a girdle.

The message of this man was interpreted to us as he gave it. Chiefly, he promised that if we follow his faith we shall, when we die, live for ever in a place called heaven.

Our king listened attentively to all that Augustine had to say; he then gave the strangers permission to preach their message to all who cared to listen. For the present the king has decided to remain faithful to his own gods."

The end of the story.—Ethelbert soon became a Christian. He and Augustine then began to plan how to convert the rest of the people in England. A great opportunity came when Edwin, king of Northumbria, the greatest kingdom in the north, wished to marry Ethelbert's daughter, Ethelburga. Edwin was himself a heathen, but he

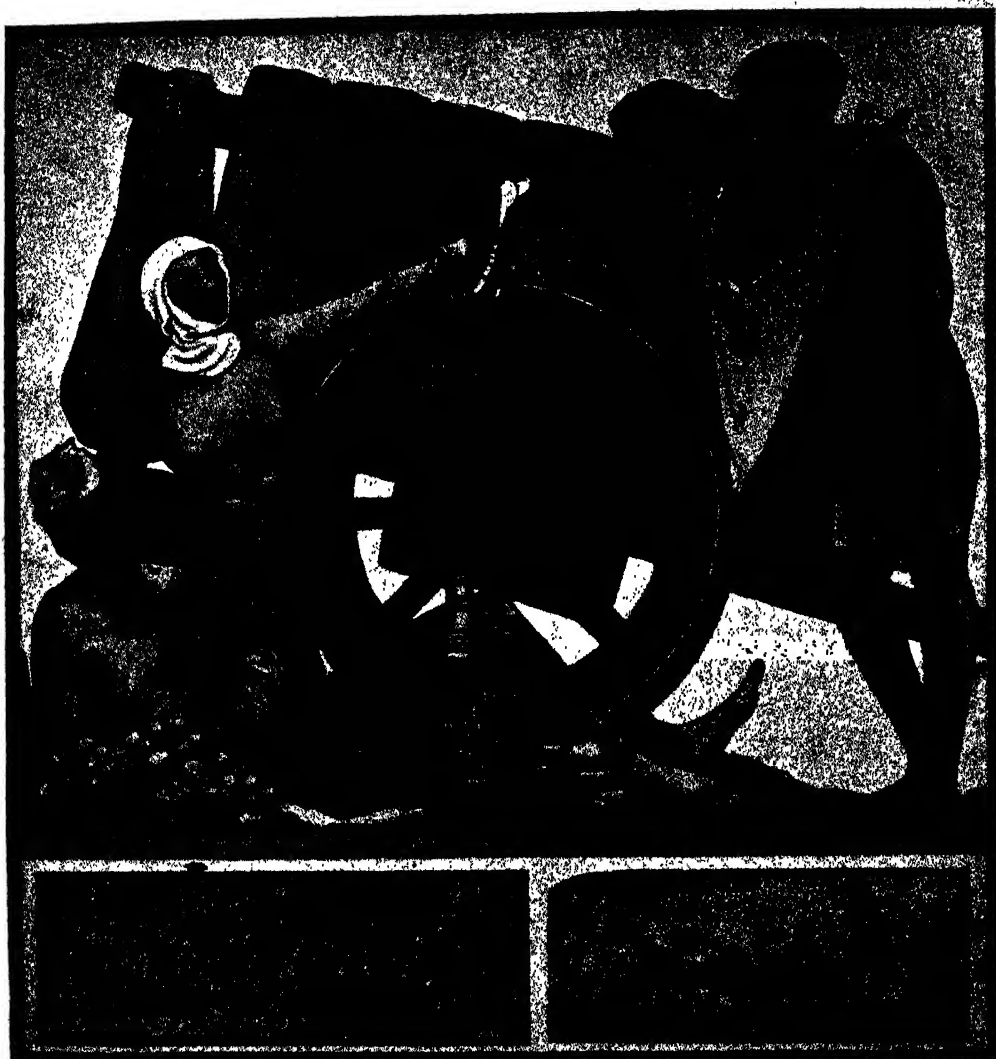
promised that the Kentish princess should be free to worship as she chose and she rode north taking with her another priest, a thin man with a prominent nose, whose name was Paulinus. He hoped to do for the north what Augustine had done for Kent.

His task was not easy, for in spite of his preaching and Queen Ethelburga's pleading, Edwin had at first no intention of becoming a Christian. As time passed, however, events turned out so well for Edwin, that Paulinus declared that God Himself was blessing and protecting him, and that in return he should give Him his heart and all he had. Once a man attempted to stab him with a poisoned dagger, and the king's life was saved by what seemed to him a miracle. Also, he was victorious over his enemies, in particular the king of Wessex.

At last Edwin came to the turning-point. He summoned his thanes and laid the matter before them. Should they remain heathen, or give themselves to God? King and warriors alike decided for God. They tore down the old idols. The king himself was baptised in a church specially built for the purpose in his capital of York, and so many of his thanes followed his example that there were not fonts enough for the baptisms, so that many took place in the rivers.

Thus the two kings, Ethelbert of Kent and Edwin of Northumbria, became Christians, and soon, with their help, the new way of living spread throughout the land. To-day, the chief homes of the Christian faith in England are still to be found in their two capitals—Canterbury, where lives the Archbishop of Canterbury, and York, the seat of the Archbishop of York. When we hear these names we may think of the work of those three great priests—Gregory, Augustine and Paulinus.

Costume—Saxon Field Workers.—The two small pictures below were drawn about 900 years ago to illustrate autumn and winter. In the left hand, or winter picture, the men with axes are felling trees and clearing the



COSTUME—SAXON FIELD WORKERS

ground, and the cart is being loaded with logs of wood. One man is barefoot, and has set his foot in the tree to lop off the top branches before felling. There are two oxen waiting under the tree, with their yokes across their necks, ready when the cart is fully loaded to be harnessed to it to pull it home. The cart is like the old "Scots carts" still used in parts of South Africa. By it lies a billhook, and over one end is

hung the cloak of the overseer or time-keeper seen in the right hand picture.

In the autumn picture the men are cutting corn. Starting from the left, the first worker grasps a handful of the ears and thrusts in his hook to cut them off. The second has cut his first handful, and is thrusting his open hand into the growing corn to get another grip. The next man is straightening his back while looking over his shoulder to

see how they are getting on with loading the cart. The man next to him has put a foot on his sheaf and is tying the bind or knot, and of the last two men, one is carrying a sheaf to the cart, and the other has just flung his sheaf on the load. Corn was not cut close to the ground in those times, but some was left standing, because, good meadow grass being scarce, the beasts could graze on the high stubble.

In the large picture the workers are having their dinner in the field under the shade of the cart. It is late spring, for the marigolds are in flower. They are eating brown bread and young leeks which the woman has brought in the large rush basket. The cloth round the neck of the man leaning against the cart is a "sowing cloth." He carries it like a bag in front of him when he goes out to sow, full of seed corn which he scatters in handfuls as he walks down the

field. He has to walk very slowly and evenly, and throw one handful to each footfall. The sowing cloth made it easy to carry the corn and use both hands at the same time. Both boys wear short tunics pulled up at the waist and open at the sides. The woman has a longer gown which she has rolled up over her knees, for the corner of the field where they sit is damp. The strip of white wrapping under the loaf is a scrap of common cloth woven like linen, probably made of the fibres of nettle or hemp; it would be greyish brown till sun, wind and rain bleached it. The bread is a mixture of grains rather coarsely ground in hand querns, or perhaps at the manor mill. It was baked under a pot buried in hot wood ashes or in a clay or brick oven heated by wood. The red of the cartwheel was probably red earth (iron oxide) rubbed up with grease.

TEACHING NOTES

1. Costume—Roman British.—As some reference is likely to be made to the Roman occupation of Britain, the picture on the next page will be helpful.

The family is typical of the Roman colonists of the period. The lady wears at her waist a neat little house-wife's belt with bronze scissors, thimble and knives, and a fine little scarlet leather purse. She has been sewing with a fine, bronze needle. Her leather shoe is neatly punched and sewn; in winter she would wear sturdy leather shoes with strong soles.

The boy's tunic is made of the same cloth as his mother's over-gown. His sandals are of strong leather with straps, such as modern boys wear in the summer (except that the buckles would be of bronze). The scrap of linen bandage round his grazed knee and his catapult are just the same as any small boy of to-day acquires, except for the elastic.

The soldier to whom he is talking is a legionary. Legionaries wore leather and metal harness, the leather parts often cut into strips to stop and entangle a sword. Where metal was used, the strips overlapped and bent like the joints of a centipede; it was a comfortable type of armour, not at all cumbersome. The helmet (galea) is seen in his right hand; he carries a thick warm cloak over his arm and dangles a key on his finger. In some countries the legionaries wore leather breeches (braecae), others seem to have gone bare-kneed with kilt-like tunics.

2. Conversation piece.—The following sets out in a dramatic form the meeting of Saint Augustine with King Ethelbert:

Let us imagine that one of King Ethelbert's nobles, or thanes, is telling another thane about the coming of the monks of Canterbury.



COSTUME—ROMAN BRITISH

1st Thane. There have been strange happenings here, my friend, while you have been away. Augustine, the Christian priest, has arrived here with forty other men, monks they call them, who wear black robes with hoods. Their heads are shaved on the top.

2nd Thane. Shaved on the top? That must look strange. Why do they do that?

1st Thane. I hear that on the day men become monks their heads are shaved, remind them always of the Crown of their Master.

2nd Thane. And was the king friendly towards these men?

1st Thane. Yes, he was quite friendly. As you know, he had promised to receive them for the queen's sake, and so he did.

At first he was afraid, as we all were, lest they should use magic against us. His Witan advised him to receive the strangers in the open air, where magic can do no harm.

2nd Thane. A very good plan. I wish I had been there to see!

1st Thane. It was a wonderful sight. The king sat waiting for them on a hilltop under a spreading tree, with us gathered round to protect him. We were most curious to see these men who had journeyed so far to bring us their message. Presently we heard the sound of singing, and slowly up the hill towards us came the procession of black-robed men, chanting as they came. You never heard such beautiful singing. First one line would take it up and then the other. Our folk-songs round the fire in winter are nothing to it.

2nd Thane. Is that really so? And yet our singing is loud and hearty. But go on. Tell me more.

1st Thane. Well, at the head of the procession walked two men, one carrying a great silver cross and the other a banner bearing a painting of Jesus Christ, who, they say, was nailed to a great wooden cross and died there. Behind these two came Augustine himself. He was a tall, dark man, dressed like the rest in a black gown with a girdle. He had a kind, gentle face and walked upright with a firm step. When the procession reached the hilltop he came forward and stood before the king. Then he spoke strange things to us.

2nd Thane. What did he say?

1st Thane. He said that his God was the God of love, and not a warrior, like our war-gods. He promised that, if we obey Him, when we die we shall live for ever in a place called heaven.

2nd Thane. And what did the king say to that?

1st Thane. He listened to all that Augustine had to tell. Then he told the strangers that he himself had no mind to forsake his gods, but that since the monks came in peace and promised everlasting life

to his people, they might stay to preach their message to any who would listen.

2nd Thane. What do you think of it yourself?

1st Thane. I? Well, at first I found it strange, for I have always held that a man's first care must be to live and fight for himself and his family. But I watched Augustine and his monks as they went quietly about their daily work, and I saw how they never thought of themselves, but gave all their time to the service of others. It seemed to me better to live at peace with our neighbours than to hate them and fight them. Besides, I would willingly live for ever in heaven. So I was baptised with water and I am now a Christian.

2nd Thane. And what does the king think now?

1st Thane. He is pleased at the change. He thinks that by this new teaching his people will be less warlike and easier for him to rule. So many are eager to learn that there are not enough teachers to explain the new way of life to them, and Augustine has had to send to Rome for more. I think it will not be long before the prayers of our lady the queen are answered, and King Ethelbert himself will become a Christian.

2nd Thane. I should like to meet this great man to hear more of this message which offers so much.

1st Thane. Come with me. I will take you to him.

3. The missionaries.—Soon at Canterbury there was a school where men were trained to become monks. Besides the missionaries from Rome there were others living in Wales, Ireland and Scotland. One of these, a saintly British monk called Aidan, came from Iona in Scotland and set up a monastery at Lindisfarne, off the Northumbrian coast. This little island thus came to be called Holy Island.

From this monastery Aidan and his monks taught the gospel to the people of Northumbria. After some time, in the year A.D. 664,



1

PICTURE SUMMARY

1. Gregory was a Roman priest.
2. He likened the Angles in the slave-market to angels.
3. King Ethelbert waits for Saint Augustine.
4. Augustine preaches to the king.
5. Augustine uses the wooden church of St. Martin at Canterbury.
6. England is divided into many kingdoms.
7. Paulinus goes to Northumbria.
8. Edwin of Northumbria is saved from an assassin's dagger.
9. Edwin becomes a Christian.



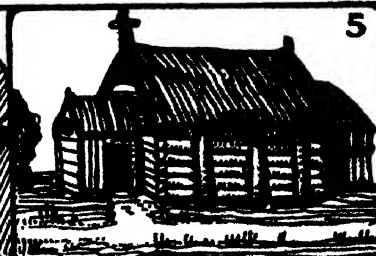
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3



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5



9



8



7



6

it was agreed that the English Church should be joined with the Roman Church and obey the Pope.

In many parts of England monasteries were built. Besides preaching, the monks worked on the land, ploughing, sowing, reaping and minding cattle and sheep. They built churches, wrote books, and taught in schools. They did painting, wood-carving, metal work, carpentry, weaving, tailoring, tanning of leather, and much more besides. They were more learned than most people, and from their example the English found out new ways of doing their own work.

4. The priests.—As the monks lived in monasteries a priest was needed for almost

every village. When a priest came to a village he set up a wooden cross round which the people would stand to hear him. Then, later, he got his followers to build a church in which to worship. It was at first a simple wooden house, dimly lighted from the door or through slits in the walls, and without seats.

Every priest had a share in the fields of a village, and his cows, sheep and pigs fed with the others. Later on, every villager had to pay the priest a tenth or *tithe* of his own corn, and one in ten of his new lambs and calves. By this means the priest was able to help the sick and the poor and give his whole working-time to caring for the people of his parish.

II. KING ALFRED AND THE DANES



CHILDREN'S STORY

The hand on the Century Clock now points to the year 878, the year in which a famous king, Alfred the Great,

hammered the Danish invaders in a very fierce battle and made peace with Guthrum, a notable Danish leader.

The chief people in the story are:

1. Alfred, always known as Alfred the Great, on account of his skill as a soldier, of his good way of life and the notable things he did for the welfare of the English people.

2. Guthrum, a notable leader of the Danes, who won many battles against the English, but was at last defeated by Alfred at Ethandune. Peace was made and Guthrum became a Christian.

Prince Alfred was greatly enjoying himself. That night there had come to the hall a tall bearded thane who, after the evening meal, began to tell stories as they all sat at the fireside.

Marvellous stories they were, too. The thane, it seemed, had recently been in battle with some foemen whom he called Vikings—men from the camps, rovers and pirates—he explained to the small boy, and he then went on to tell all he knew of these dreaded warriors.

They came, he said, from the wild parts of the world—from Norway, Sweden and Denmark. Long shallow boats about seven feet deep bore them everywhere. They were great sailors and merciless pirates. They had been worrying England for many years, sailing up rivers, leaving their beached boats under guard, and then ranging the countryside for plunder. Nothing was sacred to them, not even the churches, for, being heathen, the Danes cared nought for holy men or holy places. The priests they slew, the churches they stripped to the walls.

And they were cruel. Every village they encountered was burned after the inhabitants, men, women and children, had been put to the sword.

"But what like of men are they?" asked Alfred, deeply interested.

Tall and fair were these Danes, it seemed, and mighty fighters. The best armed of them wore mail coats, helmets with strange wings or even horns, and on their arms gold ornaments. Then, too, they carried great axes with which they were able to split a man from the crown to the waist. When brought to bay, the Danes formed a great shield-ring; shoulder to shoulder they stood while over the locked shields the axes flashed murderously. Usually the Danes proved a match for any force the English could put into the field, but sometimes they were beaten, and then, said the thane, they died as warriors should, fighting until death claimed them.

Such was Alfred's first idea of these Vikings who, since about the year 800, had been raiding the English coasts. By the time he grew to manhood, however, the Danes had ceased to be mere raiders: they had determined to conquer England, and indeed by 871 they were masters of Northumbria and most of the Midlands. Only Wessex stood in the way of complete conquest. "And surely," thought the Danes, "Wessex will not be hard to subdue."

But they were wrong. The little boy who, at the fireside, had drunk in tales of Eric the Bald and Harold the Skull Splitter was now king of Wessex and, what is more, a king who did not know what defeat meant. At first Alfred was no match for the Danes. London, Winchester, all fell into their hands. Soon there was no army in the field against them and the dismayed English heard the grave news that their king had vanished and no man knew where he was.

Actually, Alfred was hidden in the marshes of Athelney, where he laid plans for a great mass attack on Guthrum, the Danish leader.

Silently his few trusted messengers made their way to different parts of Wessex. They spread the news that the king was well and that at a certain time his faithful subjects were to gather in a named place. Spies crept like snakes about the Danish camps. From them Alfred learned the strength of their armies and—what did his heart good to hear—that they were growing careless. At last the day came. From his hiding place Alfred emerged suddenly. Quickly his nobles came to his side. Without warning they fell on the Danes at Ethandune. A rout followed. The Danes hurried into their camp, fortified with wood and earth. Round this the English drew their lines tight, so that soon the starving Danes offered to submit. They would go away; they would leave Wessex alone; they would do anything. Alfred agreed, but he had some terms of his own: the Danes must live for the future north of Watling Street and they must become Christians.

II

If you had been there.—Imagine that you had been fighting for King Alfred. Here is an account of his victory as you might have written it after you had returned home: "To-day is an occasion of great rejoicing in England. His Majesty, King Alfred, has concluded a treaty with Guthrum, the leader of the Danes, whom he recently completely defeated at Ethandune. Guthrum knelt before the king, and, putting his hands between those of his conqueror, swore to be his man. Better still, he has promised to become a Christian, and he and his men are shortly to be baptised. By the terms of this treaty, which was made at Chippenham,¹ the land is to be divided between us and the Danes, and in this way it will at last be possible for the two peoples to live peaceably together. We English are to keep Wessex, Sussex, Kent and the western half of Mercia; the remainder of England, as far north as the Tees, will be under Danish rule and law.

¹ After the treaty at Chippenham, Guthrum visited Alfred at Wedmore, so that the treaty is usually called the *Treaty of Wedmore*, 878.



PICTURE SUMMARY

1. Prince Alfred hears about the Danes.
2. The lands from which they came.
3. A Danish warrior.
4. A Danish dragon ship.
5. An English hut similar to that in which King Alfred hid.
6. Guthrum kneels before King Alfred.
7. Teachers came from afar.
8. Books were written.
9. A statue of King Alfred stands at Winchester.



We of Wessex, and all Englishmen as well, owe great gratitude to our king, for he has saved Wessex from the Danes, and in saving Wessex he has saved England too. If the Danes had taken Wessex they would soon have held all England. On the slope of the chalk hill near Ethandune, a great white horse, was long, long ago cut in the turf. It now marks the place where the king won his famous victory over the Danes."

Conversation piece, between a monk and a thane, when King Alfred died in the year 900.

Thane. This is a sad day for England. When shall we have such another ruler as King Alfred? I can hardly believe that he is dead. I must go to Winchester to see his tomb in the minster there.

Monk. He was a great warrior and a great teacher.

Thane. He certainly was a great warrior. How he hammered the Danes! When he had saved Wessex from them, he set about making it safe from all enemies. We thanes are now well-armed with swords, spears and shields. Look at my steel shirt. It will turn the blow of the heaviest sword thrust. Do you remember how our king called on us to make our towns into burghs? We dug ditches round them and built strong wooden stockades on the earth that was thrown up. We built defences, too, along the coast and on the river banks, and the Danes soon learnt that it did not pay to attack our well-protected lands. Then the king built us ships so that we need not fear to attack the enemy by sea before they ever reached our shores. He was as wise in planning as he was brave in battle.

Monk. To me the greatest work which the king did for England was his care for learning. During those dark days when the Danes ravaged the land, men forgot all that they had ever learned, and when at last the Danes left Wessex there were only a few priests left who could read a page of Latin.

Thane. That was not much loss!

Monk. You are wrong there, brother. A man who knows no Latin cannot read the services of the Church. Nor can he talk to the men of other lands, for Latin is the only language common to all the world. King Alfred did his country the greatest of all services when he gathered learned men to him wherever they could be found—Englishmen, Welshmen and even strangers from beyond the seas. Then he opened schools again in which these learned men gave lessons in the Latin tongue.

Thane. I think he did a greater work than that when he rendered many of those same Latin books into our own English tongue. For all your love of Latin, my friend, it is not the speech of the common people, and our king's heart longed that they, too, should have the chance to read and write. My son learnt his letters in one of the schools which the king set up for his thanes, and now he can read and write, which is more than I can do.

Monk. King Alfred did a great service to the nation, too, when he ordered us monks to write the *Chronicle* of the land from the earliest times. Then, there was the just *Code of Laws*, which he caused to be made.

Thane. It is a wonder to me how the king found time for all the work he did as king, warrior, schoolmaster and lawgiver.

Monk. He gave up his whole time to the service of God and his country. I knew him well, and though his health was not good he never spared himself, but worked hard, setting out his day so that every hour had its appointed task.

Thane. And yet he was not altogether a bookish man, for he was fond of hunting and hawking, and singing in the mead-hall after the feast. And how he loved travellers' tales! I can see him now sitting by the fire listening to an old seaman who told him tales of the north lands. His notebook was on his knee, and in it he would write down what the old man said, so that he himself might write it in a book for his people to read.

Monk. In our monastery we have the book in which he wrote that story. There is another book there, too, which the king wrote, and in it he says: "My will was to live worthily so long as I lived, and after

my life to leave, to them that should come after, my memory in good works." He has done as he said. He was truly a great king. I do not doubt that in after ages men will speak of him as "Alfred the Great."

TEACHING NOTES

The Northmen.—The following points are important:

(1) Geography settled for the Northmen that they should be rovers and fighters. There was too much rock and sand about Norway, Sweden and Denmark for the inhabitants to thrive upon agriculture. On the other hand the creeks and fiords, excellent natural harbours, invited ship-building and adventure on the seas.

(2) Most probably the reasons why the Northmen began their unceasing forays were

(a) that the population was growing too quickly for the space available, and (b) there was a shortage of food supplies.

(3) The pupils should be informed that the Northmen went to other places besides England. They visited Scotland, Ireland, Iceland, Greenland and even North America. Some went to the Mediterranean, and others, by Russian rivers, to the Black Sea.

III. WILLIAM THE CONQUEROR



CHILDREN'S STORY

The hand on the Century Clock now points to the year 1066, the year in which England was conquered for

the last time by foreigners. In that year Duke William of Normandy landed with a great army at Pevensey. He defeated the English under their king Harold at a place called Hastings, and soon became king of England.

The chief people in the story are:

1. Edward the Confessor, the last but one of the Saxon line of kings, who promised that Duke William of Normandy should succeed him to the English throne.

2. Harold, the last of the Saxon line of kings, who reigned for a few months. He was slain at the battle of Hastings, 1066.

3. William the Conqueror, so called because he conquered England for the Normans. He defeated the English at the battle of Hastings and then shared the land among his Norman followers.

4. Tostig, brother of Harold, who joined with Hardrada of Norway to win Northumbria from Earl Morcar.

In the year 959 there came to the throne a king in whose reign there was so little fighting that he was called Edgar the Peaceful.

Unluckily for the peace of England, powerful ealdormen, or earls as the Danes called them, had arisen. They had wide lands and large armies of their own. Sometimes they refused to take their armies to fight for the king, and they frequently quarrelled among themselves.

As the English had never made good roads in the country, it was not easy for the king with his followers to move quickly from place to place to enforce his will. He had to trust his earls, and some were not worthy of his trust.

After Edgar's death, the Danes saw that the English were not united, and they again harried the land, killing, plundering and burning as the Vikings had done in earlier times. One king, Ethelred the Unready, tried to buy them off. The tax which he put upon his people for this money is called *Danegeld*. But, of course, the Danes soon came for more. For thirty years they troubled the country, till at last one of them, Canute, king of Denmark, became king of England also. For eighteen years he ruled England well and gave her peace. His two sons who followed him on the throne were bad, useless kings, and all were glad when in the year 1042 another English king, Edward the Confessor, came to the throne. Edward was a saintly man but unfit to check the unruly earls. His mother was a Norman and he had been brought up in Normandy, a part of France which had been settled by Northmen.

The Normans had learned much from the people of France and they spoke in Norman-French. Some of their warriors, called knights, had learnt to fight on horseback; their builders of castles and churches were famed throughout Europe; their clergy were pious and learned; their traders travelled far. Edward filled his court with Normans; one became Archbishop of Canterbury and another Bishop of London; Norman traders were free to go anywhere in England, and no doubt, many looked with greedy eyes on the land and hoped one day to make it their own. The chance soon came. When Edward died in 1066, a powerful earl, Harold of Wessex, was elected king by the Witan and crowned at Westminster Abbey, which had been recently completed by the pious Edward. Harold's reign was very brief.

As soon as William of Normandy heard the news of Harold's coronation, he claimed the

throne of England. He said that Edward the Confessor had promised him the crown, and that Harold also had made a promise to him. Some time before, Harold had been shipwrecked off the coast of Normandy, and William had kept him a prisoner until he solemnly swore to help William win the English throne after Edward's death. The Duke received a sacred banner from the Pope, and with it the Pope's blessing on his enterprise.

During the spring and summer of 1066, William gathered together a large army of nobles and adventurers and a great fleet of ships. Harold prepared his bodyguard, his thanes and the peasants of the southern counties. Shortly before the landing of William news was brought to Harold that his brother Tostig had joined with a noted sea rover, Hardrada of Norway, and that they were raiding Yorkshire. Harold hastened northwards, calling out the peasants on his way, to help the northern earls Edwin and Morcar. He won a great battle at Stamford Bridge in which Tostig and Hardrada were slain.

While Harold and his army were feasting at York to celebrate the victory, a messenger arrived with the news that the Normans had landed at Pevensey on the Sussex coast. Tired as his men were, there was nothing for them to do but to hurry back to the south. Edwin and Morcar, however, the earls whom Harold had saved, would do nothing in return. In this great trial of strength between two peoples the English were divided and did not join in one army to oppose the Normans.

On October 14, 1066, a great battle was fought near Hastings in which the Normans were victorious and the English king Harold was killed by an arrow.

II

If you had been there.—Imagine that you are a Norman living in Normandy about seven years after the battle of Hastings. Here is an account of Duke William's conquest as you might have told it:

"It is now seven years since our great Duke William became king of England. It is well known how he set out to conquer the country, but it was no unjust attack. He was the lawful heir to the throne by birth, by the wish of the late King Edward the Confessor of England, and also by the promise of the oath-breaker, Harold.

"The fleet which sailed across the Channel numbered only four short of seven hundred ships. They carried 40,000 knights, archers and men-at-arms, together with their equipment—hauberks, helmets and shields, horses for the knights, six-foot bows and three-foot arrows for the archers, spears and axes for the men-at-arms. What a grand sight it was! At the head of the army, as it went on board, waved a banner specially blessed by his Holiness the Pope.

"The army landed unopposed at Pevensey, for at the time the English king, Harold, was away fighting in the north. The Duke was the last man to step ashore, and as he did so he slipped and fell on his face. Then was shown the quick wit of our great leader, for as he sprang to his feet he held out his hands, full of English soil, and cried gaily to his men, 'See, I have seized this land with my hands, and as far as it extends it is mine—it is yours.' It is little wonder that our soldiers will follow such a man anywhere.

"The English king hurried southwards, gathering a large force as he went. Then he offered battle against our army, which was encamped at Hastings. William sent him a message promising to leave him all his lands if he would give up the kingdom peaceably. Harold refused the terms and the armies prepared for battle.

"The fight was fierce, and lasted all day. At first the advantage went to the English. Once the cry was raised that William was slain, but pulling off his helmet he showed his face, crying, 'Here I am, alive, and please God we shall win yet.' The tide of battle was turned by a clever trick of our great leader. He ordered one wing of his army to turn and fly as if defeated. Many of the

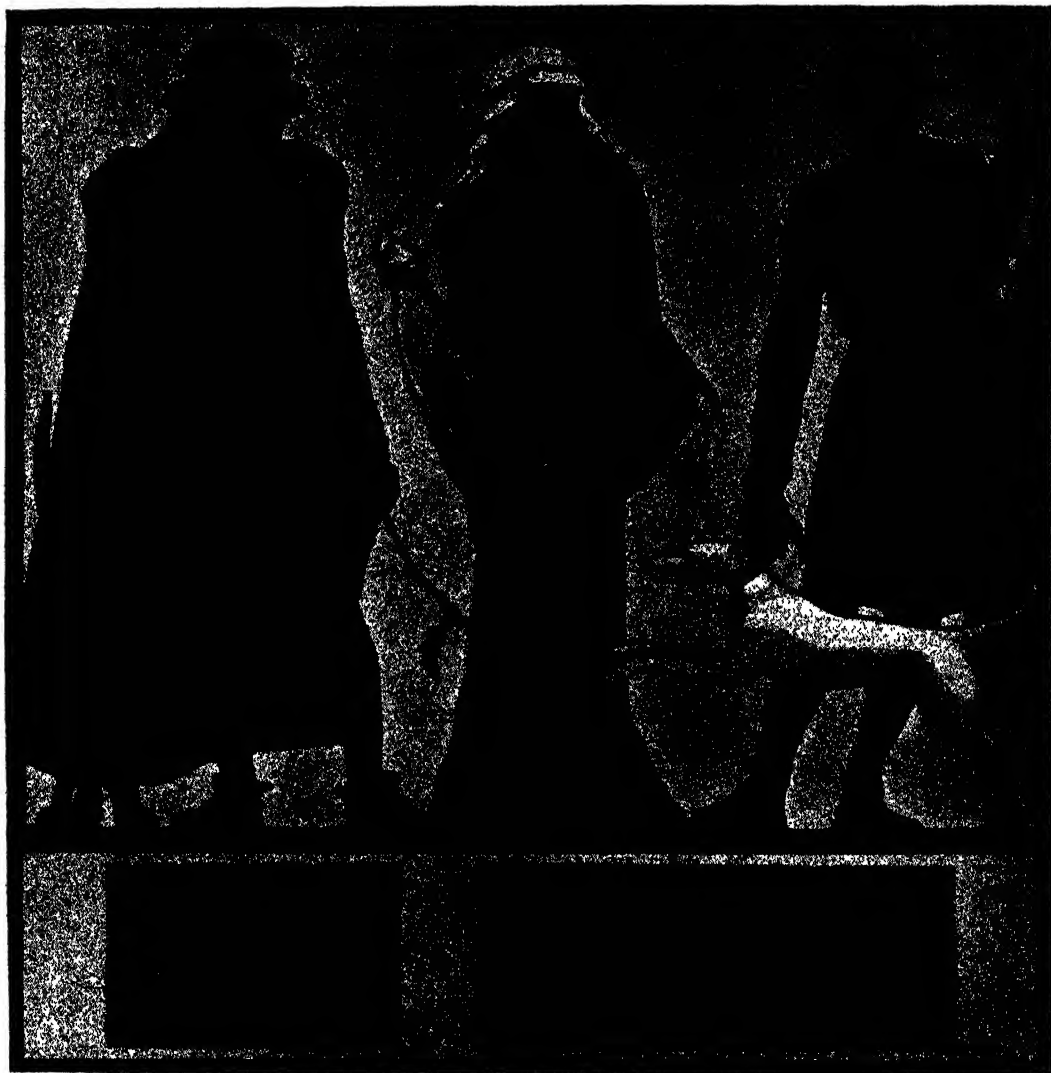
English, completely deceived, broke their shield-wall to pursue them, and our horsemen then charged and easily overcame them. They made one last rally around their standard, but Harold himself was slain by an arrow which pierced his eye. The English still left fought on till nightfall, when the remainder fled to the woods. William caused an abbey to be built at the spot where the battle was fought. It is known to the English as Battle Abbey.

"Following his victory, William marched slowly by way of Dover and Canterbury towards London. The garrison of Dover Castle gave up the keys to him without a fight. The chief men of London were willing to accept William as king, and on Christmas Day he was crowned at Westminster Abbey.

"The king then set about becoming master of all England. He showed kindness to all who obeyed him, but behaved with severity to those who withstood his will. Certain parts of the country, in particular the land between the Humber and the Tees, were so rebellious that he was obliged to lay a large part of the district waste and to put to death all who dwelt there.

"In order to keep the peace, he has had wooden 'castles' or keep-towers built at every port, every important town, every main road and every good ford. In these towers the king has placed some of the Norman barons and knights who crossed the sea with him and fought so bravely for him. They are to act as wardens to keep the peace, and in return the king allows them to gain what they can from the lands over which they rule. More and more nobles and knights continue to come over from Normandy to help the king and to enjoy the great rewards which he offers.

"Those who would like more details of the way in which King William took his kingdom will be interested in a magnificent piece of embroidery, at present being made at Bayeux, which tells the whole story in pictures."



COSTUME—NORMAN TIMES

Costume—Norman Times.—The two small pictures below are taken from an old manuscript. The first shows men's costume, cloaks and tunics, drawn in the smooth curving style admired by artists of the time. In the second small drawing one man is sowing grain, whilst the other is driving two oxen in a plough. The goad reaches their heads, and the animals are guided by switching either side of their faces. The plough is probably a piece of timber cut and trimmed so that the sharp pointed end (perhaps covered with metal to save wear) cuts through the soil, while the flat bottom and sides press the earth aside in an open furrow. The sower wears a short-skirted tunic that reaches to his knees and a soft cap pulled over his head to keep the hair

PICTURE SUMMARY

1. Duke William has had bad news.
2. He remembers Harold's promise.
3. He gathers armed warriors.
4. Many ships are built.
5. When the Normans land near Hastings Harold is at Stamford Bridge.
6. Harold makes a stand against the Normans.
7. Harold is slain by an arrow.
8. William is crowned King of England.
9. He has many keep-towers built.



from blowing into his eyes. The second man goes bare-legged and barefoot down the soft, earth furrow.

These are country people, working on the land and living in huts. In the big picture, the modern artist shows the people who lived in the castle. The man on the left wears a linen shirt under a warm, russet woollen gown, and a loose cloak; it was shaped in a circle and for ceremonies, elaborately embroidered. In this case it is a blanket-like wrap for wear in the draughty hall.

His lady also wears her most homely gown of brown russet; it is of the warm woollen cloth made from the wool of their own sheep on the estate. She has embroidered her gown in blue and her plain head-wrap of pure fine white linen looks very simple; it had taken her quite a long time to put this on, so as to get the folds adjusted at the most becoming angle. Her long, dark hair is bound up with blue, silken wrappings, cunningly coiled out at the ends so as to make her long plaits appear even thicker and longer. She is spinning with distaff and spindle as she goes about.

The boy on the right is obviously off for

a day in the woods, and has exactly the same plain woollen tunic and cloth hose that any of the men on the estate could wear. His costume is better finished, and his womenfolk have given it bands of simple embroidery to strengthen the neck and hem. The cloth for this tunic would be like any modern home-spun woollens and his shoes of tough leather secured by ties of leather or wooden buttons on the outside. His thick brown hair is combed forward; he has a hawk on a strong leather glove on his wrist, and he is brown and tanned for he rides, hunts, swims in the river, eats one large good meal a day (with only bread and cheese if hungry in between meals) and never spends more than an hour over books if he can avoid it.

The dog on the left is a big, grizzly grey wolfhound and is more heavily built (like the old English mastiff) than the later Irish wolfhound. The white dog is rather popular with hunters, for he is seen easily. The hawk is hooded to keep him quiet and the little knob on top is the handle to pull the hood off, so that the bird's feathers are not pulled out by pinching hold of them through the cloth of the hood.

TEACHING NOTES

Conversation piece.—Let us imagine that two English peasants are talking about William's plan for preparing his Domesday Book.

1st Peasant. Why were you not at your ploughing to-day, neighbour?

2nd Peasant. Because I had to go round with the bailiff to help him measure our lands and count our cattle and ploughs.

1st Peasant. It is some new plan of the Conqueror, so I hear.

2nd Peasant. Yes, he needs more money and so we must pay more taxes. Once we paid Danegeld to keep away the Danes. But now, though there are no Danes, we must pay the Danegeld to satisfy King William.

1st Peasant. I suppose they chose you

because you are one of the oldest men in the village.

2nd Peasant. Yes, they wanted to know what happened in the days of King Edward the Confessor, whom I can hardly remember. Who held the manor in King Edward's day? How much was it worth then? And then many more questions as to what there is on it now; how many ploughs; the number of men and women who work on the land; even the number of pigs, sheep and cattle. There was nothing more to tell by the time all the questions were answered.

1st Peasant. I think that the king ought to be ashamed to count the very cattle in his land. It will mean more taxes for my

lord to pay, and then he will demand more of our labour and our goods. Hasn't it been hard enough to sweat from sunrise to sunset for our Norman overlords for these last twenty years? England has suffered greatly at their hands.

2nd Peasant. That is true. For us the coming of the Normans, and the way the nobles have worked us and taken our property has been hard. Still, King William has done many good things for us which our English kings could never do.

1st Peasant. Indeed? Tell me one good thing that he has done for us.

2nd Peasant. Well, we have only one king. When I was a boy Earl Godwin ruled the south, and Earl Edwin ruled the north, and the king ruled nobody. Now we have peace. No baron, be he ever so powerful, dare fight the king. And has he not put down all thieves and law-breakers? Why, if you had a bag full of gold you could travel throughout the land and come to no harm.

1st Peasant. That is true, but I hate being ordered to do this and ordered to do that. My lord orders me to work on his manor. The Curfew bell orders me to cover my fire and sleep at 8 o'clock. Now our Norman bishops say all men must go to church on Sundays, and if not we shall be hauled before the Church court and, as likely as not, whipped.

2nd Peasant. Oh well! That is not so hard. It is good to rest on Sunday and I like to go to church.

1st Peasant. I remember the time before William brought his bishops here that we could do as we pleased on Sundays. Then, look how we have to work day in and day out for our lord. Is that right?

2nd Peasant. How else should we live? We have a share of the crops and a share of the meadow lands. And does he not fight for us?

1st Peasant. He fights for the king. He must or he will lose his manor. Then, if the king calls, I must hurry to the church for my arms and leave home for the battle.

2nd Peasant. That is nothing to grumble at. My father had to fight for his thane, and he had to fight for the king. It is all the same. Men must be ready to fight or we shall have some baron ravaging round again.

1st Peasant. One thing more. Is it fair that no man dare take a bit of firewood, or kill a boar or a hare or any wild creature in the forest?

2nd Peasant. Hush! It's unwise to talk of such things. Our Norman masters are great hunters. They kill the deer and the boar and fly their hawks. It is said that the king loves the tall deer as if he were their father, and we do well to remember it. Let us go back to our ploughing.

IV. KING JOHN AND THE CHARTER



CHILDREN'S STORY

I

The hand on the Century Clock now points to the year 1215, the year in which King John granted the

Great Charter which promised just rule to the English people.

King John was the worst ruler England has ever known. He was a man with such a terrible temper that at times he acted as though he were insane.

Conversation piece.—Let us imagine how some men living in the reign of John might have talked about the king's wrongdoing.

IN THE VILLAGE

Merchant. Tell me, friend, is this the way to the monastery?

Peasant. Go straight on, and you will see it through the trees. But I doubt if the abbot will want your cloth to-day.

Merchant. And why not, pray?

Peasant. It is but a few days since the king's men were here and took from him a huge sum of money. No man knows how much gold the monasteries have been forced to give. Some say a hundred thousand pounds.

Merchant. In the towns it is the same. Every rich man must pay, the Jews especially, for they have the most wealth. If they will not pay they are imprisoned and tortured till they do.

Peasant. I do not like the way the Jews trade, but it is a wicked thing to torture any man.

Merchant. There is little trade now, for men who have lost much money do not care to spend what is left.

Peasant. What does the king do with all the wealth he takes? It does not win him success in battles.

Merchant. No, indeed! In three years he has lost us nearly all the land we once held in France. All that rich trade we had is lost to us. But how does the king's way hurt you?

Peasant. The most grievous thing is the curse laid on our land now the churches are shut. When Sunday comes round, and no bells ring and there are no services in the church, it seems as if the very gates of heaven are shut against us.

Merchant. This is indeed a grievous thing.

Peasant. My son Gurth was married in the churchyard and our little grand-daughter was baptised in the porch.

Merchant. Be patient, friend. The great barons will not much longer endure the king's tyranny. His foreign sheriffs demand such taxes from them that they are made beggars. His foreign judges force them to pay unjust fines. But I hear that some of you have become freemen.

Peasant. Yes, that is true. So earnest is the king to get money for his foreign soldiers that some villagers have bought their freedom with their scanty savings.

Merchant. What do the manor lords think of this matter?

Peasant. It is very displeasing to them to lose the work of those who have for so long ploughed and sowed and harvested their land.

Merchant. So the king displeases all. I must hurry away to the monastery.

AT THE MONASTERY

Abbot. Welcome, my friend. I am glad to see you, but I fear that we can do no business to-day.

Merchant. I was afraid that this was a bad time to come on business. I suppose the king's men have taken much from you.

Abbot. That they have. Much more than we can spare. It is hard to find any good word to say of our king.

Merchant. If all the tales men tell of him are true he is a wicked man. They say that he broke his father's heart by plotting against him. And then he tried to win his brother Richard's land, when he was fighting in the Holy Land.

Abbot. We must be patient, friend, and pray that he will mend his ways.

Merchant. There is little hope of that. He has a most terrible temper even to madness. If he had his own young nephew Arthur murdered, as men say he did, there will never be peace in his heart.

Abbot. He can confess his deeds and repent.

Merchant. True, he can. But will he? Does he not seize the barons' castles and take their children as hostages? We merchants will stand by the barons. What will you clergy do, my lord abbot?

Abbot. We shall do as our Holy Father the Pope directs us.

Merchant. I hear that the Pope has ordered King Philip of France to come against us.

Abbot. I trust that may not be. It would be a very dreadful thing to have a war in this land. I am hopeful that the king will yield.

Merchant. So am I. But we must be prepared, for if the French do come we shall hardly know on whose side to fight. Good day, my lord abbot.

Abbot. Good day, my friend. Peace be with you.

II

The sealing of the Charter.—We can tell from this conversation some of the misdeeds of King John. He heavily taxed the people and spent the money in maintaining bands of armed retainers who were a terror to the countryside. He gave high offices to unworthy foreigners, who in the courts punished offenders severely and collected heavy fines for the king. There were a few rebellions which were immediately crushed, the rebels being punished with horrible cruelty. Still worse in the eyes of many people, John, who appeared too lazy to fight, had lost Normandy and other large possessions in France. He then greatly offended the Pope by refusing to accept Stephen Langton, a pious and learned man, as Archbishop of Canterbury.

The Pope, as head of the Church, appointed the archbishops who went to Rome to receive at his hands the badge of their office, the *pallium*, a narrow band of white wool worn round the neck. John wished to have a man of his own choosing and as he refused to yield and drove out the priests and monks of Canterbury, the Pope put England under an *Interdict*. By this order all churches were closed and no services, marriages, christenings, and burials could take place in them. There was great discontent among the people. Finally, when the Pope ordered Philip II. of France to collect an army and invade England, John agreed to allow Langton to become archbishop, he promised to repay the clergy whom he had robbed, and he did homage to the Pope, kneeling to him as his vassal. The Pope then ordered Philip not to attack England, but he refused to obey the order. John thought that he might now win back

Normandy but many barons refused to go abroad. John recovered some of his lands but when a part of his army was heavily defeated he made a truce with Philip.

On his return to England the king demanded heavier scutage than usual from those barons who had not fought for him in France. Then they took up arms. A great meeting was called at Bury St. Edmunds, where the *Charter of Liberties* of Henry I. was read, and all present swore to force John to rule by this charter.

The new archbishop, Stephen Langton, wrote down in Latin their demands and placed them before the king. He refused to accept them and gathered his paid soldiers about him. Barons, clergy and merchants of London then banded together in the army of *God and the Holy Church* to force the king to agree to their demands, which were set out in the *Magna Carta* (Great Charter).

John found it useless to resist any longer, and on 15th June, 1215, at Runnymede, a little island between Windsor and Staines, he granted the Great Charter.

Several copies of the Great Charter, each written in Latin on a roll of parchment, were sealed with the royal seal. One is in the British Museum.

By the Charter the king promised to rule by the old laws which were clearly set down in sixty-three parts. Among other things it was made clear that the Church was to be free to rule the clergy; the nobles were not to be forced to make unjust payments for their land and service; no man was to be kept in prison without a fair trial. Very little in the Charter was said about the peasants although five out of every six people in England at that time were peasants.

Of course, John did not keep his promises, but began a war on the barons. They called on Louis, a son of the French king, to help them. A horrible civil war was just beginning when happily John died in the year 1216.

TEACHING NOTES

Conversation piece.—Let us imagine that we are men-at-arms, set to guard the entrance to the pavilion after the barons have gone inside.

1st Man-at-arms. They have been inside a long while now.

2nd Man-at-arms. I shall take off my helmet. How hot it is!

1st Man. Nothing like so hot as the tempers inside!

2nd Man. Yes, the king is in a towering rage. He is like all the rest of his race, he is fierce and cruel; he cares nothing about the rights of others.

1st Man. He fears the treatment he will receive at the hands of the barons.

2nd Man. It will be no more than he deserves. Has the land known anything but shame since King Richard died? What befell Prince Arthur, John's own nephew and his rival on the throne? Foully done to death by John himself, they say, and I believe it. Did he not lose us our lands in France? Did not his quarrel with the Pope lay England under an *Interdict*, so that I must be married and my child christened in the church porch? As well shut up the very gates of heaven! How many innocent men has he not imprisoned in his grim castles, because they displeased him or he coveted their wealth? My own lord was one of them.

1st Man. And mine suffered exile. Let us hope that they are ordering things better now inside the tent.

2nd Man. Perhaps they will find a remedy for other evils done by our king. Maybe the poor man will no longer be stripped of the tools of his trade or his farm. . . . Look!—there in the bushes by the tent—did you see something move?

1st Man. Yes—there it is again! Ah, you young rascals! See, it was two urchins hiding in the bushes. What were you doing there, you rogues?

1st Boy. We wanted to see inside the tent. Oh sir, pray do not punish us.

2nd Man. Your punishment shall be—that you tell us what you saw within there.

1st Boy. The king was sitting at a table, with a terrible scowl on his face, and the great lords were all standing round him looking as my father does when I have displeased him.

2nd Boy. And a man with a shaven crown was reading from a long roll. What he said I cannot tell, for he spoke as the priests do when they say Mass.

2nd Man. He spoke in Latin then. The Great Charter which is to give us English our liberties would be written in no less a tongue. And he that read it would be the archbishop, Stephen Langton himself. What else did you see, boy?

1st Boy. The man read and read, till I thought he would never stop. But at last he said, "And to these we require that you affix your seal." Then after some more talk which we could not hear the king sealed the long roll with his signet.

2nd Boy. And then you came and caught us, and we could see no more. What does it all mean?

1st Man. It means that the king has promised to do away with those things by which the people of England are so much hurt. I wish we knew what was in the Charter.

2nd Man. One sentence of it I have heard. It was put into English in my hearing by a priest who brought a copy of the Charter to my lord's lodgings last night. It said, "To no freeman will we sell, delay or deny right and justice."

1st Man. Ah! that is what we want! But see, the barons are coming out.

1st Boy. What a number of them there are, and how pleased they look!



PICTURE SUMMARY

1. What is happening inside King John's pavilion ?
2. Two boys are curious to know.
3. The boys are caught by a guard.
4. The boys tell what they saw inside the pavilion.
5. John must grant the Great Charter.
6. He has lost lands in France.
7. He has unjustly imprisoned men.
8. Churches have been closed.
9. John, alone, is mad with anger.

"Ista sunt Capitula
que Barones petunt
et dominus Rex
concedit"



1st Baron. Surely all will be well now, since the king has allowed us to choose twenty-five guardians to see that he keeps his promises.

2nd Baron. Do you believe that even twenty-five guardians can make John keep his word? I doubt it.

1st Boy. See, they have all gone, but the

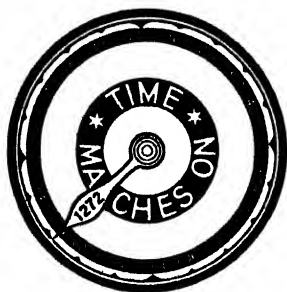
king is still inside. Let us peep in to see what he is doing.

2nd Boy. Oh look, he is rolling on the floor, and in his rage, chewing the rushes strewn upon it.

John's voice (yelling with anger). They have given me twenty-five over-kings!

V. EDWARD I.

CHILDREN'S STORY



In the year 1272 Edward I. was crowned king of England. Edward was a tall, handsome man, very fond

of hunting and of the tournament. He had fought for his father, Henry III., against the barons, and when the country was at peace he had joined in a crusade to the Holy Land. It was under the burning rays of the eastern sun that Edward heard of the death of his father.

Edward greatly desired to make England, Wales and Scotland a united kingdom under his rule, and he fought many battles to bring this about.

Conversation piece between two soldiers who have returned to their village homes after fighting in the king's campaigns against Wales and Scotland.

1st Soldier. My old friend, how glad I am to see you again! Tell me how you have fared in the wars.

2nd Soldier. I have been with the king in Wales. He is a great leader, is King Edward. None of our kings before him has ever been able to subdue that wild country. We call him the "Conqueror of the Welsh."

1st Soldier. Our name for him is the "Hammer of the Scots." But tell me what you did in Wales.

2nd Soldier. Our chief enemy was the Welsh leader, Llewelyn, who had made himself master of a great part of Wales and had taken the title of Prince.

1st Soldier. That was most unwise of him.

2nd Soldier. Indeed it was. Of course, we had to invade Wales, and in King Edward, the Welsh found their master. They retreated into the mountains, as they had always done, but we built good roads as we went, and a fleet sailed along the coast to protect our supplies, so that the Welshmen could not sweep down and capture them.

1st Soldier. That was a clever plan.

2nd Soldier. At last we had Llewelyn surrounded and he was obliged to make terms. But he did not keep them, he revolted again and was killed in a skirmish. His head was sent to be stuck on London Bridge as a warning to all those who break their promise to the king.

1st Soldier. And what did the king do then? How did he treat his enemies?

2nd Soldier. The king treated the Welshmen most kindly. He gave them a new prince, none other than his own baby son, who now bears the proud title of Prince of Wales.

1st Soldier. Were the Welsh satisfied after that?

2nd Soldier. To make sure that they should not again trouble England, we built

strong castles at Conway, Beaumaris, Carnarvon, Harlech and other places to keep them in order. I have been one of the garrison whom the king left to guard the castle at Beaumaris. But I am growing old now, and I have come back to my home again. Now it is your turn. Tell me what happened in Scotland.

1st Soldier. The trouble there began when King Alexander III. of Scotland fell off his horse and was killed. The heiress to the throne was a baby princess living in Norway. The king, who had a plan for uniting England and Scotland, proposed to the Scots that their little queen should marry his own baby son Edward.

2nd Soldier. That was a good idea. And did the Scots agree?

1st Soldier. Yes, they agreed willingly, and the "Maid of Norway," as we called her, left Norway in a boat well stocked with such things as babies like—figs, ginger and gingerbread. But alas for our king's plans! The little maid died on the voyage.

2nd Soldier. That was very sad. Poor Maid!

1st Soldier. You are right. It was a great pity. Then no less than thirteen people claimed the throne of Scotland! They asked our king to choose amongst them. He agreed, on condition that whomever he chose should own him as overlord.

2nd Soldier. Our king is clever. By so doing he would be king of Scotland as well as of England.

1st Soldier. So he intended, but John Baliol, whom he chose, refused to attend a parliament at Newcastle. He defied the king and made him very angry. I was there when the news was brought. "The false fool!" said the king. "If he will not come to me, I must go to him." He lost no time; he gathered an army, and we set out for Scotland.

2nd Soldier. Were you glad to go, my friend?

1st Soldier. Yes, I was glad. I was weary of sitting at home. We marched north and soon Berwick had fallen to us, with great slaughter, and we advanced over the border.

Baliol surrendered and his kingship was taken from him. Our king carried off from Scone the Stone of Destiny on which the Scottish kings had been crowned.

2nd Soldier. And where is the stone now?

1st Soldier. It has been taken to Westminster to be built into a coronation chair for our kings of England.

2nd Soldier. What happened after that?

1st Soldier. Before long we held all the important posts in Scotland, and the Scottish nobles were coming in every day to swear allegiance to the king.

2nd Soldier. That was good indeed.

1st Soldier. It was too good to last. A new Scottish leader appeared, one William Wallace, a bold outlaw knight, a handsome fellow who gave us a great deal of trouble. At first he was successful. He defeated the English governor at Stirling and made many a bold raid into Northumberland. But in a few years we had made good our losses, first by a great victory at Falkirk, and secondly by ravaging the countryside and bringing the nobles to terms. In the end they were all pardoned except Wallace. He was betrayed for gold and hanged, drawn and quartered; though I for one was sorry that a brave man should meet such a shameful death.

2nd Soldier. I have heard something of that great battle of Falkirk. The king found a new fighting method, did he not?

1st Soldier. Yes, he had brought with him a party of bowmen from your own land of Wales.

2nd Soldier. Ah, well I know those bowmen with their great five-foot longbows of yew. They draw them to the ear, instead of to the breast as we English do our short bows. How amazed I was when first I saw the strong swift flight of their clothyard arrows.

1st Soldier. They did good work at Falkirk; I can tell you. The Scottish spearmen were drawn up in great hollow circles, with the bowmen in the centre, protected by a hedge of spear points against which our knights dashed themselves in vain. But the archers

poured in a shower of arrows which soon made a gap in the circles. Our men poured in, and the day was ours.

2nd Soldier. So now, with Wales and Scotland obedient, the land can be at peace. Long live our good King Edward!

II

The end of the story.—The soldier was mistaken. Wales gave no more trouble, but the fighting spirit of the Scots was still alive. They found a new leader in Robert Bruce, who appeared in 1306, eight years after the battle of Falkirk. He gathered round him a host of discontented nobles, and slew in a church a rival named Red Comyn, who was a friend of Edward. Then he had himself crowned. When the news reached Edward, who was by this time an old man, he swore that he would never rest till he had avenged Red Comyn's murder. His son, Prince Edward, also swore to carry on his father's campaign for the conquest of Scotland. But neither of these oaths was kept. The king died on the way north, and his son, who was crowned as Edward II., was a feeble and unwarlike man who abandoned the war and returned to London.

Robert Bruce took castle after castle, and in 1313 only the fortress of Stirling remained in English hands. This was the *key* of Scotland, for it guarded the roads from the Highlands to the Lowlands. Even King Edward was stirred to hold this fortress. He led one of the greatest armies an English king had ever led in battle, but at Bannockburn, within sight of Stirling, the English were disastrously defeated in the year 1314. Scotland was never conquered by a foreign country.

Costume—13th Century.—The small pictures below were drawn by 13th century artists, usually monks, along the margins of prayer books and histories. Such illuminated manuscripts were often painted in bright colours and enriched with gold and silver. The first drawing on the left is done inside

a letter "C," and shows a monk arguing with a knight, while a labourer listens, leaning on his metal shod spade. The monk is tonsured and the knight wears the flat-topped helmet with an eye slit, which was fashionable at that date. The labourer wears the coif—a close linen cap tied under his chin.

The next small manuscript drawing shows cooks preparing dinner. One man is poking the fire under a big iron cauldron, while with the other hand he is about to stir its contents.

(The cauldron was an important piece of property and is shown in many manuscript drawings to indicate a person to be possessed of some means. It was used for cooking food, washing the baby or measuring grain.)

The man behind the cook is beating and cutting up meat. Notice the three-legged kitchen table or block and his sensible cleaver.

On the right of this is a man pounding up grain or spices or fruit.

The last drawing shows a man and his dog going shooting (he is re-drawn again above), only at this time, as he will be hunting in winter, he wears a cloak and leggings. His bow may be of yew, ash, or any elastic tough wood, split lengthways, so that half the thickness of the bow is of heart wood, and half outer wood from nearer the bark. The notches at each end are made from sheep's horns (the sheep at this date had small ridged straight horns). The hollow horn fitted very neatly over the end of the wood and the natural grooves at its tip could be deepened to make a slip notch for the bow string. You carry a bow *unstrung* and bend it to string it taut before you begin to shoot. The arrows are feathered from a white goose wing as—the feathers of geese are easier to find.

The labourer (re-drawn in the centre) wears a plain coarse hempen-linen or natural wool tunic. It is just a front and back of one length of cloth with sleeves added and the sides below the waist left open to give more freedom in wear. These side pieces could be wrapped over each other and secured under a belt. This labourer carries



COSTUME—13TH CENTURY

coarse fingerless gloves such as hedgers wear to-day and goes barefoot.

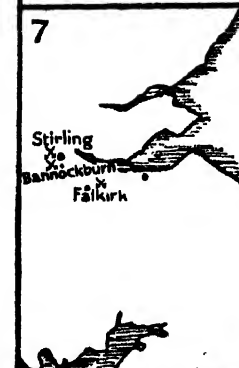
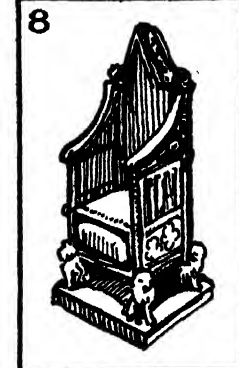
The lady's white head wrap is made of two straight lengths of linen—the first is put over her head and around her neck like a scarf. The second piece is sewn into a ring and pulled on like a crown, holding the first piece steady. She wears a bluish-grey woollen gown, over a linen gown (smooth) below. The linen shows at her wrists, and

would show at her ankles if she lifted her skirts. She has a woollen wrap or cloak made from the natural dark brown wool of the mountain sheep and her shoes are plain, soft strong leather. We cannot be quite sure about her little hen, but it was probably just an ordinary barn-door brown, and rather short in the leg, as some of the old Scotch breeds called "Dumpies" used to be.



PICTURE SUMMARY

1. Prince Edward in Syria learns of the death of his father, King Henry III.
2. Prince Llewelyn submits to Edward I.
3. Llewelyn's head was later stuck up on London Bridge.
4. The baby Prince of Wales.
5. The death of King Alexander III. of Scotland.
6. There were thirteen claimants to the Scottish throne.
7. Battles were fought at Falkirk, Stirling and Bannockburn.
8. The Coronation Chair enclosing the Scottish "Stone of Destiny."
9. Prince Edward promises his father, Edward I., to conquer Scotland.



TEACHING NOTES

Time Drill.—It is suggested that the teacher should devote an occasional five minutes to *Time Drill*, in order that the children may develop a time sense.

(a) Let every child make a Time Clock and keep it in good order.

(b) Put the pointer to the date of the landing of St. Augustine.

(c) Put it to the date of the Treaty of Wedmore.

(d) Find out how many years there are between Augustine and Alfred.

This plan is continued until the children know what span of time comes between

Alfred and Hastings, Hastings and the Charter, the Charter and Edward I. We can then reckon the time interval between Augustine and Edward I. and any other intervals which may occur to us. The main object of this drill is (1) to get the class alive to the greatness of the stretch of years between one event and another; (2) by the constant use of the Clock to fix the few necessary dates; (3) to drive home the facts that one year seems a long time, how much longer ten years seems, but how very much longer is one hundred years.

VI. THE MONKS

CHILDREN'S STORY

I

In our first chapter we saw that the first great turning point in the history of England was the coming of St. Augustine with his forty monks to preach the Gospel to the heathen English. For more than nine hundred years the monks lived, preached and worked in England, so that we ought to know a good deal about them if we wish to understand English history.

Let us imagine that you are one of a party of travellers, riding through the countryside on a hot afternoon. You have been on horseback since dawn, and now thoroughly tired, you approach a monastery where you will be allowed to stay for the night.

1st Traveller. Good-day, sir. We've come to beg a night's lodging, for we've been riding since dawn.

Porter. Come in, by all means. If you will sit here for a minute, I will call one of the brothers, who will see that you have everything you require.

1st Traveller. Thank you.

2nd Traveller. This is the first time I've been inside a monastery. It seems to be a huge place, like a small town.

1st Traveller. It needs to be big. There are hundreds of monks living here. Look at them going into the church! It must be Vespers, and that bell we heard was to call them in from their work.

Monk. Good-day, gentlemen! I have just come from the abbot himself and he asks you to dine with him to-night.

1st Traveller. Why, that is kind of him! We shall be delighted. And now, brother, I wonder whether we may see a little of this great home of yours?

Monk. Certainly. I will take you through the grounds. It is a pity it is Vesper-time, for we cannot go inside the church. It is

very beautiful. There is coloured glass in the windows and some of the brothers have painted pictures all over the walls. You would admire our altar with its gold cups and candlesticks. They were given to us by a rich merchant.

2nd Traveller. It sounds very fine. And how often are you expected to attend services there?

Monk. Seven or eight times a day.

2nd Traveller. Seven services a day!

Monk. Yes, and more on special occasions. Our lives are very regular and busy. We begin our day at midnight with Matins. Then we may sleep until seven o'clock, but from then until eleven we have services in church. In the afternoon we work in the fields and in other ways till we have Vespers. After supper we have another service before going to bed.

2nd Traveller. I should think you are ready for it by then!

Monk. Oh, we are always busy. Here is one of the places where we do a great deal of work. It is the cloister. You see how this passage runs all round the square patch of grass in the middle? It catches all the sunshine, and is sheltered by the church from the cold wind. That is our well in the middle of the grass.

1st Traveller. It must be pleasant to work here, for look how the sun shines through the arches! Tell me, what sort of work do you do?

Monk. We copy old manuscripts for our libraries, or study books, or write prayers. Here, in this western cloister, the novices study. They are young men learning to be monks, and must work hard. Here in the eastern cloister we have our school where we teach the village children their lessons. This room here leading off from the cloister is the chapter house. Every morning the abbot calls us all together here to discuss any business.

2nd Traveller. It must be cold in the winter. All this grey stone is so chilly.

Monk. In very cold weather there is a fire in one of the recreation rooms. We are

sometimes allowed to wear fur boots instead of sandals; and our hoods help to keep out the cold. Here is our refectory, where we have our meals.

1st Traveller. What a big hall it is! How do you manage without a log fire?

Monk. We are quite used to going without one. See, the floor is thickly covered with rushes, so it is not cold to our feet.

2nd Traveller. Who sits at the top table which is raised above the others?

Monk. The abbot sits there. He orders the meal to be served, and he says grace. You see that pulpit over there? During dinner one of us reads aloud from the Bible or other sacred book—for of course we may never speak.

2nd Traveller. What sort of food do you have? I have been told that you never eat meat!

Monk. We never eat meat on Fridays, but otherwise we may do so. We are just coming to the kitchens and you will see how busy everyone is. There are so many of us here, that the cooks are always either preparing one meal or polishing pots and pans after the last. The food is cooked in these great iron pots hung over the fire. No doubt they are very much like your own. We supply almost all our own food. Through this window you look out on to our corn-fields. That field over there is pasture-land for our cattle. We bake our bread, and we make all our butter and cheese. We have a big vegetable garden too, and a special plot for herbs. We cannot see the poultry farm or the pig sties from here, but we have both, and also many beehives.

2nd Traveller. You must be kept busy attending to all these matters.

Monk. The lay brothers—the younger monks—do most of the work on the land, and we also have servants to help.

1st Traveller. I can see a pond over there under those trees.

Monk. That is our fish pond. Luckily there is a fine trout stream running through our grounds, so we made from it a pond which we keep stocked with fish.

2nd Traveller. You must find the stream useful for your water supply.

Monk. Yes, and it also makes an excellent drain. We throw refuse into the stream just before it leaves our grounds, and then it is all swept away.

1st Traveller. When we were standing at the gate, I saw many peasants coming along with loads of food and other goods. Why do they bring you this, since you have so much in your own grounds?

Monk. These peasants live down in the village, and they are allowed to hold plots of our land on condition that they help us work it and give us a share of their corn. We, in return, are always ready to help any who are ill, or hungry, or unhappy. We teach the children in school, and we see that the people attend their parish church. To-morrow you will pass through the village and you will probably see our seneschal going about his work. He attends to all the affairs between us and the villagers. He sees that they pay their dues, and that they are doing their work well. He is always very busy.

2nd Traveller. Is your life all work and prayer then? Do you have no free time?

Monk. Oh yes! In the morning we have half an hour for conversation, and then after our mid-day meal we have an hour for recreation. In the afternoons, too, we older monks do not work in the fields, but may talk to friends, or have a nap, or attend to our personal affairs. We may receive relatives, if we wish. There is a special room for that purpose. The novices may play games, so long as they are not too noisy. Some of them are clever chess players.

1st Traveller. These are great buildings! What are they for?

Monk. They are the storehouses for our grain and hay. The larders are next door. If you look in you will see our bacon hung up for curing, and the herbs hung up to dry. From here you can see the sick room standing by the stream. Farther up the stream are the stables, and the sheds for

marking and shearing the sheep. All the sheep belonging to this monastery are marked with a red cross.

2nd Traveller. Will you show us where you sleep?

Monk. Our dormitories are close to the church, so that we can easily get there for the night services. Here we are.

2nd Traveller. What a number of beds! I should find it hard to sleep with so many in a room.

Monk. You would get used to it, sir, as many others have done. You would be surprised if you knew the stories of some of the monks here. Many were brought up in surroundings as rich as your own, with every comfort money could bring.

1st Traveller. Then why did they leave it all?

Monk. Oh, some for one reason, some for another. Scholars find that with the constant warring of one noble against another, there is no peace for quiet study. They find plenty of quiet here. Sinners find that here they can lead useful lives and so make amends for their misdeeds. Those who are alone in the world find friends in the monastery. Those who are penniless find a home here. Rich men, poor men, clever men, stupid men, sinners and men who have been good Christians all their lives, live here together.

1st Traveller. It seems to me that your monastery is a farm, a hospital, an inn and a school, as well as being a huge religious community!

Monk. You are right, sir! It is all those. Here we are now at the abbot's house. He is expecting you and I must go. I hope you will enjoy your stay with us. Good-night.

Travellers. Good-night, and thank you!

II

The Friars.—About the time of the sealing of the Great Charter two new orders of monks came to England. These were the friars or brothers. They did not live in monasteries but travelled through the country, preaching and helping the poor.

the sick and the unhappy. Having no money, they were obliged to beg for their food, and for this reason they were called the "mendicant," or "begging friars." The two orders were the *Black Friars*, or Dominicans, founded by St. Dominic, whose name is preserved in the district of Blackfriars in London, and the *Grey Friars*, or Franciscans, founded by St. Francis of Assisi, the gentle saint who loved the birds and beasts and all God's creatures.

The monks and friars did a great service to England and Europe. By their prayers

and their good lives they kept religion and learning alive in the midst of war and cruelty and ignorance. Some of them gained a high reputation for learning. There was Roger Bacon, for example, the friar with a great passion for scientific knowledge. In one of his many writings he said that ships would one day go without rowers, carriages would travel without horses, and machines would fly like birds. Men of his time did not understand him and for fourteen years he was imprisoned, but we now know that he was one of the world's most original thinkers.

TEACHING NOTES

Monasteries.—It should be realised that the various types of monks would build slightly diverse types of abbeys and be interested in different things and therefore choose different places for the buildings. The Cistercians were very good sheep farmers, so they liked England and usually built their abbeys in districts good for sheep-walks. Their careful breeding of the sheep did much to improve English wool.

The abbey illustrated on page 34 is in North Wales. It was built in 1200 by the owner of the castle (seen to the east in the plan). He gave the monks the small shut-off valley near his land (to the west). The Cistercian monks came over from France, built a church which they dedicated to the Virgin Mary, and founded an abbey which in time became very rich. It was called the abbey of the Vale of the Cross—*Valle Crucis*. Some people think that this is because there is an old landmark there of an earlier date—but that may never have been a cross; it may have been merely a pillar. Far more likely the abbey was given the name later because the monks put up crosses all around where mountain tracks led towards it. These crosses, in some cases, would be well made and carefully finished alongside a road, but on a hill-track would be roughly cut out of

some convenient block of mountain stone, rolled down and reared up into position. Many of these smaller crosses have fallen down, broken and perished, but several can be found. Their purpose was to mark the way, so that travellers would know they had reached the edge of the hill and if they turned down-hill would find the abbey in the valley where they could pass the night. These crosses would be particularly useful to distant herdsmen bringing wool on pack-ponies, for the monks were wool merchants.

The quarries (where the monks got the stone for building) can be found on the hill-side, and the old grass-worn tracks where they slid it down are still there. (*N.B.* Stone is so heavy that it is sometimes easier to work from rock that is farther away if the route is down-hill, rather than drag it along the level.)

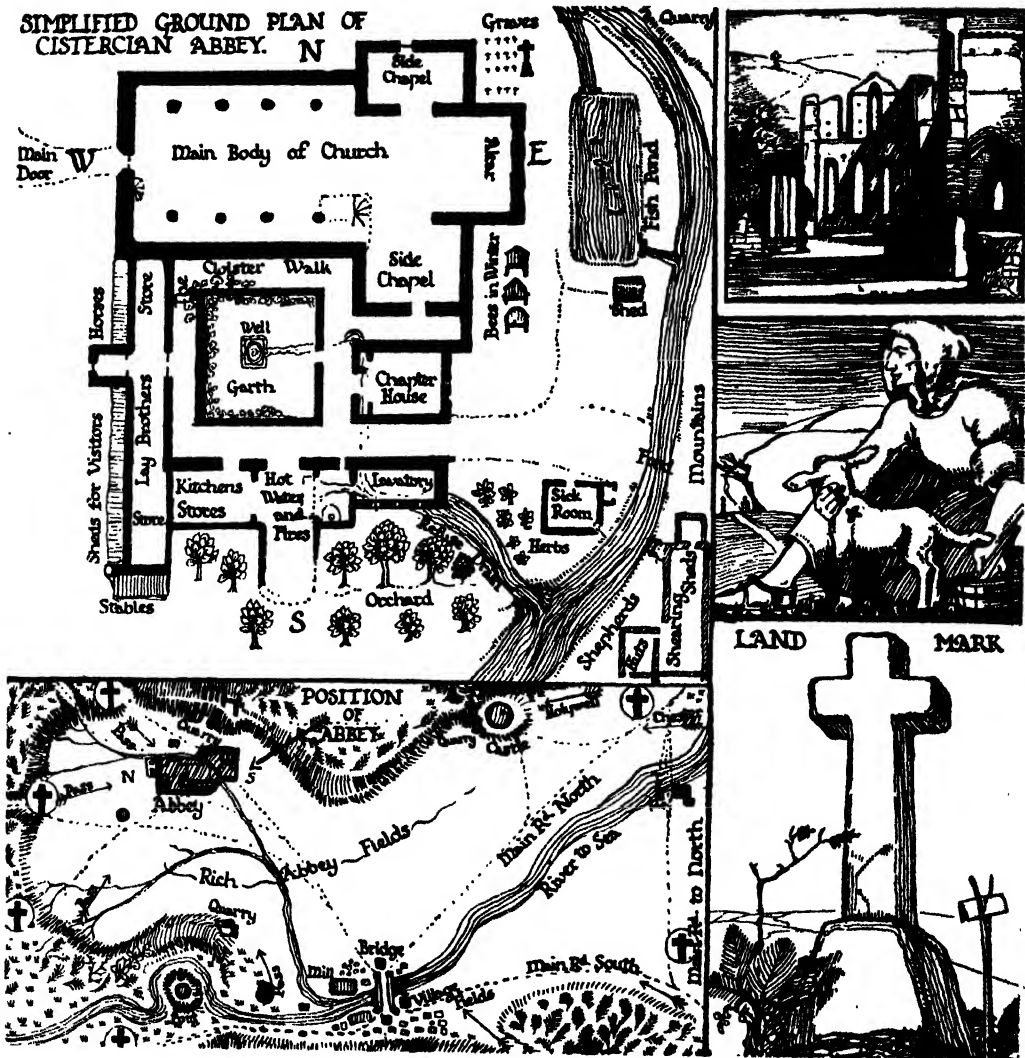
A small stream, well-stocked with trout, went by the abbey and the monks made a fishpond with sluices, so that they could keep the pond stocked with fish.

There was a spring in the abbey garden from which the water welled up and bubbled in a clear stream. This was led underground into a proper drain, so that there was plenty of water handy in the kitchens and for baths in the lavatory, and the refuse drain went into the river below the abbey.

PICTURE SUMMARY

1. At all hours the monk is called to prayer.
2. Some men fled from the world to become monks.
3. Some labour on the land.
4. Some write books.
5. Some teach.
6. All spend long hours in prayer.
7. Travellers are entertained at the monastery.
8. St. Francis, the great Friar, loved all living creatures.
9. Roger Bacon prophesied that machines would fly like birds.





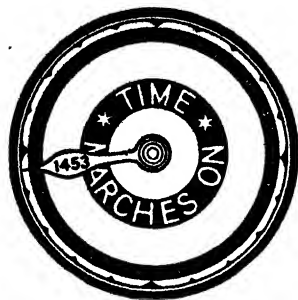
PLAN OF A MONASTERY

The ordinary build of the church and chapels and cloisters, etc., is shown.

Note the strategic position of the abbey. All traffic down from the hills must pass it—far enough away not to trouble the monks, but close enough for convenience. The main roads, north and south, led to the wool markets, and the tracks over the hills were in all directions to enable the monks to gather the wool.

A small drawing shows a characteristic stone cross. In a slit stick at the side the artist has shown how a scrap of parchment with a message would be left for some monk or drover who would be passing. Above, a young monk is marking one of the new lambs with the abbey mark: he probably used red raddle as they do to-day. His costume would be made of natural coloured wool fleece.

VII. SAINT JOAN OF ARC

CHILDREN'S
STORY

The hand on the Century Clock now points to the year 1453, the year which ended a hundred years of war

between England and France. The war began in 1337, in the reign of Edward III. who for various reasons wanted to win back the French lands which once belonged to England. The English won several notable victories, chiefly because Edward had in his army a large number of bowmen who easily shot down the heavily armed French knights. Yet, when Edward died in 1377, after a reign of forty years, English power in France was much weaker than it had been before the war began.

The next king to make a great effort to win France was Henry V. He won many battles but died in the midst of his triumphs. He left a baby prince to become king as Henry VI., so the war was carried on under the leadership of his uncle, the Duke of Bedford. He, too, was successful and it seemed that England would become master of France. Then occurred a series of remarkable happenings connected with a young French peasant girl named Joan of Arc.

Let us imagine that a soldier in France has written the following letter to his wife in England, telling what he saw and heard about Saint Joan:

The letter.—"Brother Gregory, who came over with our army, is writing this letter for me, and sends his greetings to you, and to that good brother at the abbey whom you will ask to read it to you. There have been strange doings here since I wrote to you last. I told you then how our English

armies had won almost all the country north of the Loire. The Dauphin held only the south, the gateway to which was the town of Orleans, which we were besieging.

The town was strongly defended. It had round it a high thick wall with many strengthening towers and over one hundred cannon mounted on the walls. The French had a great store of lead and powder, arrows, darts and cross-bows. They had, too, plenty of wine, corn and cattle, so we knew that the siege would be a long one.

On October 12, our army of 4,000 horsemen reached Orleans with a great train of bullock carts carrying barrels of powder, cannon and cannon-balls, and all things needed to win the town. We easily took one fort which defended a bridge, but our numbers were not enough to go round the town and though we fought hard we could make no headway. So we went on all through the bitter winter, half starved for want of supplies. An odd thing happened just before Lent. Soldiers were bringing us 300 cartloads of supplies and a great store of salted herrings. Suddenly the French poured out of the fortress to seize our goods, but you can be sure that we fought hard for our food and we beat off the French. We toasted the herrings on spear points round our camp fires, and how good they tasted! We call this fight the *Battle of Herrings*.

After their defeat the French seemed to lose heart and we were eagerly looking forward to the day when the town would surrender.

Then the astonishing news spread through our camp that a great army was coming to relieve Orleans, led—of all strange things—by a peasant girl! This girl, whose name was Joan, declared that she had been sent by God to raise the siege and to drive us English out of France. The story went that she heard angel voices telling her what to do,

and that in obedience to these voices she had made her way to the court. Men said that she knew the Dauphin at once and picked him out from among his three hundred knights, though she had never seen him before. The Dauphin believed in her and bade his armourers make her a suit of mail and give her one of his horses. Our soldiers laughed when they heard the news of her coming, though some of us were rather afraid.

One night after sunset, a great shout from the town told us that the Maid, as they called her, had arrived, and the next day there came her herald ordering us to raise the siege. Later that day I saw her myself, standing on the battlements in shining armour. She carried a banner, which we have learnt to dread, and she called out to us to depart, if we would avoid misery and shame. She was right, too. Her coming put heart into the French, and wherever her banner appeared they won the day, till we began to think that she must be a witch. Before long we were obliged to raise the siege.

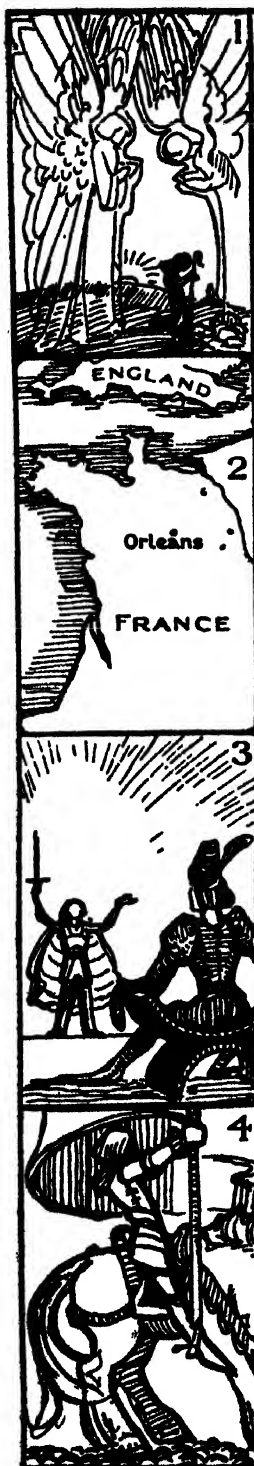
What do you think this amazing girl did next? The French will have no man as their king till he has been crowned in Rheims Cathedral. Joan said that the Dauphin must go there for his coronation. Most of the towns between Orleans and Rheims were in our hands, but as the Maid and her army drew near they opened their gates to her. On the 17th July, in this year of grace 1429, the Dauphin was crowned as Charles VII., king of France, in Rheims Cathedral, while the Maid stood beside him holding her standard.

It is said that after the crowning Joan begged to be allowed to go home to her parents and her sheep, for her work was done. But the new king would not let her go. Now that so much had been gained he grew slothful. Joan led the army as far as Paris, which we hold, but they did not take it—I have heard say, because the leaders would not follow Joan. Doubtless they were jealous of her, and not willing to be

led by a woman. Soon after that the Maid was taken prisoner by the Burgundians in a battle in which she was pulled from her horse. They sold her to us, and for four months she was kept in prison, while it was decided what to do with her. Many of us hated and feared her, and were for burning her as a witch. But I was not so sure, though of course I did not say so.

Charles made no attempt to save her, and at last she was tried by a Church court and condemned to death as a heretic. She was burnt at the stake in the market-place of Rouen. I was there, and the last words I heard her say as the flames rose around her were, 'No, my Voices have not deceived me. They were from God.' I wonder if she was right. I have sometimes felt that it was not God's will for us to try to take this land away from the French who have lived in it for so long. As she died, brave to the last, I heard one of our captains, who had been most hot against 'the witch' say to himself, 'We are lost. We have burnt a saint.' And it is true that since then we have had no more victories. King Charles' armies steal forward step by step, and we cannot stop them. I hope that this foolish war may soon be over, and that I shall be able to come home again to you and our little ones. Kiss them for me."

The end of the story.—Joan of Arc was dead, but her spirit remained. After that day in Rouen, nothing seemed to go well with the English. They lost Paris and then the whole of Normandy, and by 1453 nothing was left of the English possessions in France except the port of Calais. In the year 1920, five hundred years after Joan's death, she was recognised as a Saint by the Pope, because of her love and purity and her faithful service to God and man. Every year on the anniversary of the saving of Orleans, the French hold a procession through the streets of the town in honour of their saint, and in many towns of France are statues to her memory.



PICTURE SUMMARY

1. Joan the shepherd girl hears Voices.
2. The English were besieging Orleans.
3. Joan put heart into the Dauphin.
4. Her courage and example helped the French to win battles.
5. The Dauphin was crowned at Rheims cathedral.
6. Joan was taken prisoner.
7. She was tried before a Church court.
8. The English burnt her as a witch in the market place of Rouen.
9. The spirit of Saint Joan still lives.





COSTUME—15TH CENTURY

Costume—15th Century.—During the 15th century, dress became extravagant. The simple country people did not wear extraordinary clothes, but about the court fashions came and went so fast that it was difficult to keep up with them. To give a general idea of ordinary street usage, the picture below on the left is taken from an execution scene described in a volume of Froissart.

There are some important people on horseback with pages standing behind them, holding their horses' tails (at least they should be, but one small boy is stealing apples from the open basket of the market woman standing next to him). A young man dressed in the extreme of fashion with gold curls and long pointed-toed shoes (most unsuitable for horseback) edges close to some comfortably dressed townsfolk.

Above has been redrawn a young dandy at the time of Richard III. when it was fashionable to wear a loose brocaded jerkin and carry your hat on your walking cane. His gloves are embroidered and scented, and though his hat in this case is black, it could

have been pink plush or pale blue. No wonder the market woman is struck dumb at his style. The only detail that needs explaining about the woman's costume is the hood which has a long tail or liripipe, so long that she tucks the end of it into her girdle.

TEACHING NOTES

Causes of the war.—The causes of the Hundred Years' War can be briefly explained as follows:

Edward III. was a warrior like his grandfather, Edward I., and a very large part of his reign was spent in war with France. There was a good deal of ill-feeling between English and French merchants and seamen, for men of both countries wanted to get as much trade as possible, especially of the important wool trade with Flanders.

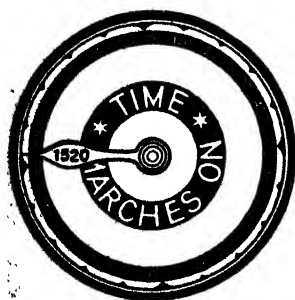
When the French joined in league with the Scots, Edward decided to invade France. Parliament was willing to vote the money and the English were quite ready to help their king, for they were proud of their bowmen who had fought so well in Wales and Scotland. On every village green men

and youths practised shooting at the butts with the new longbow, and very skilful they became. Then, too, they looked forward to getting plunder and taking notable prisoners whom they would ransom for large sums of money. The war was fought as much for greed as for anything else.

England still held French lands from which wine was brought. The wine-trade was valuable for there were no proper water-works at that time and the only other drinks were ale and mead.

Edward claimed the right to be king of France as well as of England. He did so because his wife was a French princess, though he well knew that the French would not admit his claim.

VIII. THE REFORMATION IN ENGLAND



CHILDREN'S STORY

I

The hand on the Century Clock now points to the year 1520, the year when a great religious revolution

was begun by Martin Luther. A few years later, in 1534, the English Parliament declared that the king was the Supreme

Head of the Church of England. This was a most notable event. England had decided that the Pope was no longer to be considered as the Head of the Church of England.

For more than one thousand years there had been in western Europe one Church, at the head of which was the Pope. For centuries the clergy had held the highest offices in the State and in the court and many of the Church estates were very large. Regular payments were sent from each country to the Pope's treasury at Rome, and some of the higher officers of the Church were very rich and lived in a grand manner.

But times were slowly altering. Many people had grown tired of the rule of the clergy; men were anxious to control their country's affairs themselves; many resented the regular payment of money to the Pope's treasury, and some looked with envious eyes on the estates and riches of the bishops and abbots.

In Germany a great religious revolution was begun by Martin Luther on the morning of December 11, 1520, when he burned a Bull directed against him by the Pope. Luther boldly criticised certain practices of the Church and when he read the Bull denouncing him, he defiantly burned it in a great bonfire in the market square of Wittenberg. The emperor, Charles V. of Germany, ordered him to appear for trial at Worms, and he was then condemned as a heretic. So many people, however, desired to see some reforms in the Church that Lutherans increased in great numbers. When the emperor ordered the princes of Germany to see that every man in their lands obeyed the Pope, they *protested* and banded themselves together to insist on the right to practise what religion they pleased. These rights were asserted in the *Protest of Spires*, 1529. From that time the Church was split into two bodies, the protesting party or Protestants who would not obey the Pope, and on the other side the faithful Catholics. This great religious change, when the Protestants separated from the Catholic Church, is usually called the *Reformation*.

Henry VIII. looked with great disfavour upon Luther and his teaching. He wrote a book against him, and the Pope bestowed on him the title of "Defender of the Faith," which remains one of the titles of our sovereigns.

In 1527, about the middle of his reign, Henry VIII. busied himself with plans for getting another wife. He had been married to Katharine for twenty years, but he had no son to follow him, and only one daughter, a delicate girl named Mary. He resolved to marry a young lady of the court named Anne Boleyn, and he told his chief minister,

Cardinal Wolsey, to arrange the matter with the Pope. Wolsey could not persuade the Pope to agree to the plan, and Henry was furiously angry with his minister. Wolsey was driven from his offices; all his estates were seized and he was reduced to poverty. Shortly afterwards he died.

The Reformation Parliament.—The ten years that followed the fall of Wolsey were of great importance in England's history. The king was all but supreme in the land; the Church alone stood in his way. He was determined to marry Anne Boleyn, and as the Pope would not give his consent to the marriage, Henry finally decided to become head of the Church in England himself, then he would be able to do as he pleased in all Church matters as well as in State matters. He arranged to carry out his plans by the help of Parliament. A noted Parliament which sat from 1529 to 1536 is called the *Reformation Parliament*.

The king's chief counsellor was Thomas Cromwell, who had been both a trader and a lawyer. The king found Cromwell extremely useful for carrying out his plans, and it was not long before Cromwell's power in the land was almost as great as Wolsey's had been. A learned scholar, Thomas Cranmer, became Archbishop of Canterbury. Cranmer sincerely believed that it would be best for England if the king were the head of the Church, and he was quite prepared to support Henry.

In January 1533, Henry and Anne were secretly married and, later, Anne was crowned in Westminster Hall. Shortly afterwards Cranmer pronounced Henry's marriage to Katherine of Spain to be null and void.

Thus Henry defied the Pope and became complete master of the kingdom when Parliament passed an *Act of Supremacy*, 1534, by which Henry was declared "The only Supreme Head on Earth of the Church of England." The king was now supreme over all in his own realm; all the power and wealth in England which had belonged to the Pope passed to the king.

In September 1533, Henry's queen, Anne, had a daughter, Elizabeth, who later became queen of England.

II

Conversation piece.—Let us imagine that we are living in the year 1533. It is Whit-Sunday, June 1st, and we are among the crowd outside Westminster Abbey watching a procession go by—it is the coronation procession of Queen Anne, the second wife of Henry VIII. It is a magnificent cavalcade. First come two judges and the new Lord Chancellor all in splendid robes, followed by a group of singing choir boys and a number of nobles in robes and coronets, four of whom carry a canopy under which walks the new queen. She wears pearls in her hair, and a gorgeous coronation robe with a long train carried by a duchess. A number of her ladies, dressed in glowing colours, bring up the rear of the procession, which passes slowly by, leaving the bystanders to discuss it.

1st Speaker. So the king has had his way and we have a new queen.

2nd Speaker. I hope she will prove as good a wife to him as did our dear Queen Katharine.

1st Speaker. It still seems strange to me that after so many years of happy married life he should have wished to get rid of the good queen.

2nd Speaker. He had no son, and no heir but the Princess Mary, and he feared that the land would not endure to be ruled by a woman, and that there would be civil war. Then, too, his conscience was troubled that he had married the wife of his dead brother, a marriage which the Church does not allow.

1st Speaker. But the Pope had given him special leave to marry Katharine.

2nd Speaker. True, and for many years his conscience did not trouble him. But now men say that he has used it as an excuse to get rid of Katharine and marry Anne. Katharine will have no more children, but Anne may give him a son and heir.

1st Speaker. The Pope is very angry and threatens to excommunicate him.

2nd Speaker. Much the king cares! They say he is glad that all this has happened. Now he and not the Pope will be head of the Church in this land. It irks him that any man in the realm should be richer and more powerful than he. He drove Wolsey from power and would have had him executed, but that the old man died.

1st Speaker. I had thought that that was because Wolsey could not persuade the Pope to grant the king his release. At any rate he soon found in Archbishop Cranmer a servant who showed him how to get what he wanted.

2nd Speaker. It is my belief that the marriage question was only an excuse. Henry was waiting for a chance to be free of the power of Rome. Be that as it may, Henry is now the only great man in England, and I for one am glad of it, for though he takes his pleasures where he chooses and allows no man to gainsay his will, yet he loves England and we shall prosper under his care.

1st Speaker. I hope you are right. Men speak darkly about the new minister, Thomas Cromwell. They say he has spies everywhere. We must be careful how we speak.

2nd Speaker. No man need fear so long as he is loyal to the king.

1st Speaker. But spies are hateful. They can turn your words round and make as though you speak treason. It is death to speak one's thoughts about royalty.

2nd Speaker. You are down-hearted, friend. All will be well, and listen, if this Thomas Cromwell does not tread warily, his turn will come like Wolsey's.

1st Speaker. I have little doubt of that. There, the last of the procession has gone inside. Long live the queen! Long live the king!

III

Three years have passed since Henry VIII. became Supreme Head of the Church of England. Now, in 1537, on the advice of his new minister, Thomas Cromwell, he has decided to close all the smaller monasteries

for many monks have refused to accept him as head of the Church. Let us imagine that we can hear the conversation between two men who stand in a crowd watching the monks as they are turned out of a monastery.

1st Speaker. It is a cruel shame to turn out our good brothers. What harm have they done?

2nd Speaker. When the king's men sent round commissioners to the monasteries to find out how they were conducted they found, or professed to find, many things wrong.

1st Speaker. That may be true. But you know quite well what good service the monks have given. Haven't they always helped the poor and the sick? Haven't they given shelter to travellers and taught the children to read and write?

2nd Speaker. True, but see how rich they have become. Look at their great fields, their sheep and cattle. Look at the treasure of gold and silver in their halls and churches. Is it right that they should be so rich?

1st Speaker. And why not? They always worked hard themselves and the treasures were given to them by pious folk.

2nd Speaker. The commissioners say that many of them no longer work. They have become lazy like the friars and think of little but eating and drinking and pleasure-making.

1st Speaker. Perhaps a few have been idle but why should all suffer for the sake of a few.

2nd Speaker. Because the monks will not own the king as their head. Parliament says that all men in the land must own the

king as head of the Church. They are lucky to escape with their lives.

1st Speaker. It is a sad day for them and a sad day for the poor. If that minister Cromwell had not set his eyes on the treasures in the monasteries this would never have happened.

2nd Speaker. The treasure will be useful to the king. He will not need to lay such heavy taxes on us when he has all the riches from the monasteries.

1st Speaker. I am glad to hear that the men of Yorkshire have joined together to speak to the king. Thirty thousand of them are marching south. They call it the *Pilgrimage of Grace*.

2nd Speaker. They will do much more harm than good. If our king and Parliament make a law it is foolish and wrong to go against it. Is it not better for England that our king should be head of the Church?

1st Speaker. King Henry is no true Catholic to treat the holy brothers so.

2nd Speaker. Hush! That is treasonable talk and Cromwell's spies are everywhere. It is death to speak against the king. I say that our king is a good son of the Church. Has he not ordered that a copy of Coverdale's Great Bible shall be chained to a pillar in every church?

1st Speaker. That is well. I went last Sunday to hear the priest read from it. How the people crowded round to hear the sacred words read in our tongue. Even little boys stood there greedily listening.

2nd Speaker. We live in wondrous times. England will always remember our king for giving us this Great Bible. Long live the king!

TEACHING NOTES

Conversation piece.—The following imaginary informative conversation will be helpful to the children's understanding of this difficult period of history.

Let us imagine that we are living in the year 1522, and we are among a crowd gathered to watch the great Cardinal Wolsey go by in state. The crowd is made up of



1

PICTURE SUMMARY

1. One of the king's titles.
2. Henry VIII., the first king to wear it.
3. Martin Luther defied the Pope.
4. St. Peter's Church at Rome.
5. Cardinal Wolsey was ordered to arrange a divorce.
6. Thomas Cranmer showed Henry a way out.
7. Henry determined to close the monasteries.
8. Thomas Cromwell, the hammer of the monks.
9. Protestants were burnt as heretics.



2



3



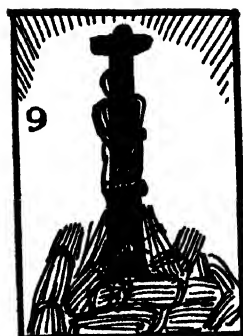
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5



6



9



8



7

many kinds of people. There are working folk dressed in tunics and hose; monks and friars in grey or black habits; rich men's servants in tight short coats, wide stuffed knickerbockers and tight stockings with low shoes. Here and there is a nobleman in a splendid suit of red or green or some other bright colour, his doublet trimmed with bars of velvet or fur and slashed so that material of another colour shows through. Round his neck is a stiff starched ruff, for starch is a new invention and starched articles are all the fashion. His feet are in square-toed slippers, and he wears on his head a flat cap of rich velvet with a feather, while a graceful cloak hangs from his shoulders. Here and there, too, in strange contrast to the richly dressed nobles whose suits may cost anything up to a thousand pounds, there stand learned men in long severe black robes.

Presently the procession comes in sight, and a splendid array it is! First comes the Cardinal's attendants in crimson velvet doublets and his lesser officers in coats of scarlet bordered with black velvet. One gentleman bears the *Great Seal* to signify that Wolsey is the Lord Chancellor and another the Cardinal's hat which shows that he is a Prince of the Catholic Church. Two massive silver crosses are carried before the Cardinal himself, a magnificent figure on a mule with trappings of crimson velvet and gilded stirrups. In his hand he carries an orange stuffed with spices that he may not notice the evil smells of the narrow London streets.

The crowd are talking about him as he goes by:

1st Speaker. This is a procession fit for a king. He is a great man is our Cardinal. Only the king is greater.

2nd Speaker. What would our king do without him! Men say he works every minute of the day and half the night in the king's service. He rules the Law Courts and rules the Church. I wonder that the king is not jealous of him.

1st Speaker. Jealous! Why should he be? The Cardinal serves the king faithfully. He

lives only for the king. He knows that with a breath the king can bring him to nothing.

2nd Speaker. But is not the Cardinal to blame for our heavy taxation?

1st Speaker. No: Parliament alone can levy taxes. They are to pay for the king's wars in France. Foolish wars, too, I think. That's one good thing the Cardinal has done for England. For seven years he has kept us out of war. Why do Englishmen want to bother about winning land in France when we need so much money at home. Look at the hundreds of poor starved people in the country.

2nd Speaker. Too true. Those sheep farmers have ruined the countrymen. Some farmers are very greedy. They raise the rent of the peasants' cottages and when they cannot pay, out they go, man, wife and family to beg for food and as likely as not be locked in prison as vagabonds.

1st Speaker. That's as may be, but what would this country do without wool? The cloth trade we must have or we shall all be beggars. I hear that the Cardinal is expecting every rich man to pay a Benevolence to the king.

2nd Speaker. There has been much talk about those Benevolences. Loans of money they are supposed to be, but when shall we get the money back, I should like to know. Why doesn't the king call Parliament and raise a tax in the proper way?

1st Speaker. Because it suits the Cardinal to do all the ruling himself. He wants no Parliament to interfere. So long as men pay Benevolences there will be no Parliament. So don't pay, say I.

2nd Speaker. Don't pay and be locked in the Tower. No thank you. I prefer to pay. But with so much money needed for the king do you think that it is right for the Cardinal of the Church to be so rich?

1st Speaker. So long as he uses his riches for the Church it does not matter. He has begun a great college at Oxford and another at Ipswich where he came from. But I hear there has been much trouble about Church matters in Germany.

2nd Speaker. You are thinking of the monk, Martin Luther. He has raised a storm if ever a man did. But what good can come of defying the Pope and burning his Bull? Our king has written against this Luther, and the Pope has blessed him with a new title—"Defender of the Faith."

1st Speaker. Still, I believe there are great changes coming. I have up at Oxford a son who learns Greek. He tells me that many great scholars are studying the Greek Scriptures and we shall soon have the New Testament translated into English so that all may read it. Then he says there will be great changes. Every man will get his religion from the Bible and not from cardinals and priests.

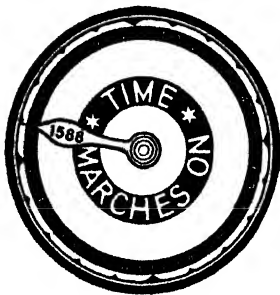
2nd Speaker. It's not right to talk that way. What can an ordinary man know about religion? Let the priests do the thinking for us. That is enough for me.

1st Speaker. You are old-fashioned. I am one for the New Learning. Did not our king say, "Let every man have his own doctor?"

2nd Speaker. Yes. But you are not the king. Well, that's the end of the procession. God bless the Cardinal, say I. With all his pomp and riches he has a great burden to bear. I would rather keep my shop than sit on his mule, even if he has five hundred lords and servants to do his bidding. Good-day my friend.

1st Speaker. Good-day to you, but remember what I said about great changes.

IX. THE GREAT ARMADA



CHILDREN'S STORY

The hand on the Century Clock points to the year 1588, the year when Phillip II. of Spain sent a

great fleet called the *Armada* to invade England.

Philip was the greatest sovereign in Europe. He was a staunch Catholic who thought it his duty to try to bring the Church of England back under the religious rule of the Pope. He supported the claims of Mary Queen of Scots to the throne of England, for many Catholics thought that Elizabeth had no right to be queen because the Pope had not agreed to the marriage of her mother, Anne Boleyn, with Henry VIII. They looked on Mary Queen of Scots as the rightful sovereign and for

nineteen years plots were made to depose Elizabeth and put Mary in her place.

Philip had other reasons for going to war with England. The "sea-dogs" as the English seamen called themselves continually ravaged the Spanish settlements in America and captured the huge treasure-ships carrying gold and silver to Spain. Philip determined some day to punish England for this piracy.

In 1587, after a plot for the murder of Elizabeth had been discovered, Mary of Scotland was executed. Then Philip prepared to invade England to avenge her death, for she was a Catholic and she had bequeathed her claims to him.

II

Conversation piece.—Let us imagine that we are living in the year 1588 and on one July morning are listening to the conversation of some seamen in a tavern at Plymouth.

1st Seaman. Why do you think that the Spaniards will come this year?

2nd Seaman. Because the Vice-Admiral says so, and when Francis Drake says that something will happen, happen it will. Have I not served under him these ten years? He can see into the future, I tell you, and knows what a ship or a Spaniard will do. He knows that the Spanish fleet is ready again, now that they have replaced the eighty ships we burnt last year. You must have heard that tale.

1st Seaman. It was a tale that made all England smile. "Singeing the king of Spain's beard," Drake called it, did he not?

2nd Seaman. But for that same singeing we should have had the Armada on us last year, for so they call the great fleet which is to conquer England and put it under the Pope once more. Now that the beard has grown again, it cannot be long before the fleet comes. But we are ready too. Our ships are manned and the taverns all along the waterfront are full of seamen ready at the word to go aboard. I think, though, that they will not come to-day, for the captains are gone to Plymouth Hoe for a game of bowls, and that they would not have done had there been news of the Armada.

1st Seaman. It is strange to think that England is in danger now because King Henry VIII. made himself head of the Church in England and defied the Pope.

2nd Seaman. A pack of troubles that has led us into! First there was little King Edward, Henry's son, who would have us all Protestants; and then came his sister, Queen Mary, who was as hot to have us Catholics again. But I am for our good Queen Bess, who would have us think rather of our country's safety than of our own opinions. And so, I think, are all the people of England, Catholics and Protestants alike, for they are all gathering to defend our queen and country.

1st Seaman. Our land sorely needs our help in these days, for she is beset by dangers, of which the greatest is Spain, the richest nation in the world and the Pope's staunchest ally. I have often marvelled what possessed Queen Mary to marry Philip of Spain.

2nd Seaman. She hoped that he would aid her in bringing England back to the old faith. But nothing came of that match but trouble. When Queen Mary died, and Elizabeth came to the throne, Philip gave help to Mary, the Catholic queen of the Scots. You remember all the plots to murder our queen and put Mary on the throne. Men say that Philip of Spain was behind them all.

1st Seaman. Elizabeth endured much during those long years when she held Mary a prisoner in England, not daring to let her go lest she should raise an army in France or Spain. But that last foul plot was Mary's undoing although she knew nothing about it. The ministers clamoured for her death and our queen was obliged to have Mary executed.

2nd Seaman. And none too soon! It should have been done many years before, to my thinking, when Mary first fled here from Scotland. And now that danger is past along comes this Armada.

1st Seaman. Do you think we shall defeat them? You have seen the Spanish ships and know their strength.

2nd Seaman. So I have, and believe me, it is not so great as folk imagine. True, they are huge vessels carrying many men, but these are soldiers, not seamen. Their only way of fighting is to wait till the enemy comes close, and then shoot them down from the high decks or board the vessels and fight hand-to-hand. But Drake taught us a trick worth two of that when we sailed the Spanish waters in the New World. Spanish waters indeed! Why should the king of Spain enjoy all the treasures there, even if Columbus did find them for him? Many a raid have we carried out on the Spanish treasure ships, and always it was the same—draw as near as you can and let fly a broadside before they can get their guns to work on you—they carry them fore and aft instead of amidships as we do. Surprise them, and in a moment you are over their rail and carrying up the good treasure chests from the hold.

1st Seaman. I often envied you those voyages with Drake.

2nd Seaman. Many a brave adventure did we have. I remember once we found a Spaniard asleep on the seashore with thirteen bars of silver by him. These we took, but left the man still sleeping. I would have given much to see his face when he woke to find his treasure gone and himself still living. Drake never descends to deeds of cruelty. He is a hero, and with him and such as he to lead us—Hawkins and Fro-bisher and the rest—we shall drub these Dons back to Spain, I promise you. But see, here comes a seaman from our ship, in hot haste.

3rd Seaman. News, friends! The Armada has been sighted off the Lizard. I am come from taking the tidings to the captains on the Hoe.

2nd Seaman. And Drake? What did he do?

3rd Seaman. Why, he laughed, and said, "Come, gentlemen, there is time to finish the game first and beat the Spaniards afterwards."

2nd Seaman. Did I not tell you? He is a hero as fearless as he is cool and wise. But we shall be wanted aboard. There is no time to be lost.

III

How the news might have been told in England.—Imagine that you had been in England when the Armada came. Here is an account of the victory as you might have written it:

"This day marks for Englishmen the end of a great danger which for many years has hung over our nation. The great Armada, which bore the might of Spain towards us, is defeated and scattered, and only a tattered remnant has returned to carry the story to the king of Spain.

The tale of how they were put to flight will ever stir the blood. It was on Friday, July 19, that the Armada was first sighted. Slowly the great crescent of ships moved up the Channel, while ashore all was bustle and preparation. At last out came the

English ships to meet them—34 of the royal navy, with many great names among them, *Victory, Dreadnought, Vanguard* and *Revenge*. With them sailed many merchant ships, which in the past had done good work in helping to plunder the Spaniards of some of their ill-gotten gains in the New World. The fleet, numbering in all some 197 vessels, made no attempt to engage the enemy, but followed the commanders' plan of keeping up a running fight all down the Channel. Time and again our little ships would dart up to the giant galleons, discharge a hail of shot and sail off again before the great vessels had time to turn on them. Rigging trailed on the Spanish decks; blood ran in streams. But still there was no real battle. On lumbered the Armada, while our vessels, like a swarm of stinging flies round clumsy cows, darted hither and thither harassing their progress.

At last, after nearly a week of such warfare, the Armada came to anchor in Calais roads, where for a time they were safe and the English ships could not get at them. Here they intended to wait for the Duke of Parma with an army of 17,000 men. But they were not left long in peace. The English admirals decided to smoke them out with fire-ships. Eight of the oldest and most useless ships in the English fleet were daubed with pitch, resin and brimstone, and their cannon loaded with powder and shot. Silently the fire-ships were towed toward the Spanish lines. It was a dark night and the Spaniards saw and heard nothing. Then suddenly out of the darkness appeared a blazing shape bearing down upon them, and followed by another and another, their cannon booming as the fire reached and discharged them. Once they floated among the wooden Spanish ships the whole fleet would soon be ablaze. The panic-stricken Spaniards cut their cables and made for the open sea, and in the morning they were far away from their safe anchorage. A battle followed and the Spanish ships fled, only to be caught in storms and lose still more of their number.

on the rocky coasts of the Orkneys and Ireland. So came to an inglorious end the proud fleet which set out to capture this island. Not one English ship was lost, and not a hundred Englishmen were killed."

The end of the story.—Deep was the thanksgiving in the hearts of the English at their deliverance from this great peril

which they had dreaded for so long. While all the bells of London pealed for joy, the queen went in solemn procession to St. Paul's, where among her subjects, she gave thanks to God for the victory which she believed He had given. She caused medals to be struck in honour of the occasion, on which were engraved the words, "God blew with his winds and they were scattered."



COSTUME—ELIZABETHAN PERIOD

Perhaps there was in that crowd, huzzajing as loudly as any, a man of about twenty-three. Will Shakespeare had but newly come to London from Stratford to make his fortune. He was an actor and, if report speaks truly, a poor one, at the Globe Theatre. Here he sometimes did useful work by patching up old stories and histories into plays for his fellow-actors. His work proved to the liking of the audience and soon Shakespeare was busy writing plays of his own. Thus were given to the world charming comedies and great tragedies. Not only the sailors made Elizabeth's reign great; in his own line Shakespeare is as supreme as Drake was in his.

Costume—Elizabethan Period. The bottom picture on the right is of the time of Henry VIII. and shows fine lords and ladies going on a river picnic in a barge decked with green boughs and flowers. The next small circle picture taken from a calendar (the sign of the scorpion in the sky), shows a countryman carrying a sack of grain on his back. His clothes are much the same as in previous centuries, but of better quality, and he now wears a linen smock or tunic to protect them. The next picture is of a well-to-do woman riding to market. Her hat is of black felt, and her starched ruff and stuff dress are much finer than those of previous centuries. The stout woman with the geese and hens is probably quite as well off, but doesn't "hold with" these new fashions, and continues to wear the old-fashioned head-wrap of her grandmother's time.

In the large picture the same two women are seen at market. The central figure

might well be Welsh, for the Welsh national costume dates from this period. The small white cap under her tall hat is becomingly frilled. Her sleeves would probably be made separately and tied or stitched to the fitted bodice she wears over her corset. This makes the dress more easy to sew, and the sleeves slip off quickly when there is rough work to be done. Her ruff and cuffs crackle with starch, for starch is a new invention and she likes to be up to date. Her thick white stockings are probably of knitted wool. Her shoes are of stout black leather and have heels an inch high (another innovation in this century). The more old-fashioned woman behind her has only an extra strip of leather on her strong boot heels. Her bodice is cut to show the sleeves of the old-fashioned chemise which women have always worn.

The man's costume, taken from another manuscript, was probably copied by a country tailor from a city man's clothes. The tailor probably used ordinary country home-woven cloth, though he may have chosen one of the new dyes which the Elizabethan sailors were always on the look out to find. Courtiers' collars might be of fine lace, copied from Italian, Dutch or French fashions, but this man's is of English lawn and fine but simple English needlework. His felt hat has a gallant plume, his stout country shoes a cheerful trimming, and his beard and hair are cut as close to the court fashions as he can copy, for he admires Sir Walter Raleigh, and the other sea captains under whom he has sailed. Meanwhile he shows the ladies his latest trophy, a flying fish brought back from his travels.

TEACHING NOTES

1. The connecting links.—Henry VIII. left three children, Edward, Mary and Elizabeth. The youngest, Edward VI., was a frail child who became king at the age of nine and died at the age of sixteen. During his reign two Protectors ruled the country for him, and under their rule the Protestant movement made much progress in England. The most notable event was the preparation by Archbishop Cranmer of the *English Book of Common Prayer* which Parliament ordered to be used in every church, 1549. Up to this time, the services and prayers of the Church had been given in the Latin tongue, but it was only natural that as the people now had an English Bible they would wish to have an English Prayer Book. Also, the Prayer Book contained the teaching of the Protestants.

When Edward died in 1553, his half-sister Mary came to the throne. She was suffering from an incurable disease and died five years after her coronation. Mary was a staunch Catholic who got the Parliament once again to accept the Pope as Head of the Church. Then there were many persecutions against Protestants. Mary married Philip of Spain, but this marriage was unpopular, for the English and Spaniards were fierce rivals for the treasures in the newly-discovered lands. To add further to Mary's troubles, Philip went to war with France, and in 1558 a French army captured Calais, which England had held for two hundred years. It was no real misfortune, for the cost in men and riches to hold this fortified town in France had been very great; but the disgrace was keenly felt by the queen and her people. Added to this, Philip deserted his queen. On November 17, 1558, sad and lonely the poor queen died

2. Queen Elizabeth, 1538–1603.—Elizabeth ruled England for forty-five years, and ruled it so well that her people loved her and spoke of her as "Good Queen Bess," and "Gloriana"—The Glorious Queen. We speak of her reign as "The Elizabethan Age." Now were seen some of the best fruits of the *New Birth* or *Renaissance*. The Age is famous for its scholars, writers, poets and dramatists; its adventurers, seamen and discoverers; the builders of new ships; the architects of palaces and lordly mansions.

Elizabeth set about the task of making a united Church. The first Parliament which met in 1559 passed a new Act by which England once more threw off the authority of the Pope. In order to offend the Catholics as little as possible, Elizabeth refrained from taking the title of "Head of the Church" and was acknowledged as "Supreme Governor of the Realm." By an act of Uniformity all persons were required to attend religious services at their parish churches on Sundays and Holy Days, and use the new Prayer Book, which was the second revised book of Edward VI.

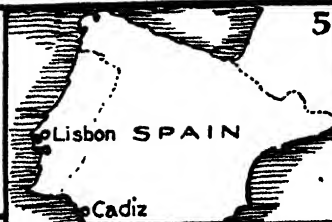
Thus the Reformation was again recognised in England. Of course, many people were not content; some zealous Protestants thought that Elizabeth had not done enough for the Reformation, while some zealous Catholics thought that she had done too much. But her "Middle Way," as it is sometimes called, was on the whole successful. Thus Elizabeth won the people to her side and was able to turn her attention to the danger from Spain.

Note.—Elizabeth's character and work are told in Vol. IV., page 139 *et seq.*

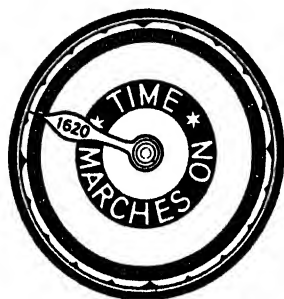


PICTURE SUMMARY

1. Sir Francis Drake was playing bowls.
2. One of the great convoy.
3. King Philip II., the master of the Armada.
4. Queen Elizabeth, his enemy.
5. Drake delayed the Armada at Cadiz.
6. A running fight in the Channel.
7. Fire - ships drove them frantic.
8. The Queen and her people gave thanks at St. Paul's.
9. Shakespeare was another mighty Elizabethan.



X. JAMES I. AND THE PILGRIM FATHERS



CHILDREN'S STORY

The hand on the Century Clock now points to the year 1620, the year when the Pilgrim Fathers landed

in America and founded New England. Let us try to understand how this notable event came about.

When Queen Elizabeth died, her successor on the throne was James VI. of Scotland, who became James I. of England, 1603. The two countries, who had for centuries been enemies, were now united under one king, and James introduced the name *Great Britain* to the two kingdoms taken together.

The family name of James was Stuart (or Stewart), hence the line of sovereigns who ruled Great Britain for a little more than one hundred years (from 1603 to 1714), is known as the *Stuart Dynasty*. It should be noted that this period covers the 17th and the beginning of the 18th centuries.

We have seen how during the reign of Henry VIII., the sovereign had become head of the State Church. This Church of England claimed to be both Protestant, that is *protesting* against the leadership of the Pope, and Catholic, that is conforming in general to the religious practices of the ancient Catholic Church.

There was, however, in the Church of England a large and growing party called Puritans who desired to abolish many of the ancient Church customs and worship in what they conceived as a *purser* way. They wished to replace bishops and priests with ministers chosen by themselves,

who were to preach and pray in their own words without reference to a prayer book.

Many Puritans at this time began to separate themselves from the Church of England into congregations of *Independents*. When they were persecuted, they fled, first to Holland and later to America. We will now read what happened to some of these Independents who came to be known as the "Pilgrim Fathers."

II

Conversation piece.—Let us imagine that it is September 6, 1620, and that we are among a crowd of people watching the departure from Plymouth of a ship bound for America. In the crowd are a man and woman who have ridden in from their country house to see the ship sail. The man, who has a small pointed beard, wears trunk hose, padded breeches, a gaily embroidered doublet with a stiff upstanding white collar, and a short coloured cloak. On his hair, which he wears long and curled, is a feather-trimmed hat. His wife wears a similar hat and high collar, and her rich gown, trimmed with ribbons and lace, is covered with a long travelling cloak.

Man. See, wife, there is the *Mayflower*! Her sails are set, and I expect she will go out with the tide.

Woman. Look! there is a boatload of people embarking to go out to her. I should have known them for Puritans anywhere by their plain clothing. How strange it must be to have no ribbons or feathers or laces, and to wear nothing but dull colours! I am glad you do not wear your hair straight like the man in the bow of the boat. Tell me, why do Puritans dress so?

Man. They seem to think that gaily dressed folk must lead wicked lives, and it is certain that many people nowadays do

spend too much money on their clothes. The Puritans are neat and orderly in their clothing, just as they are honest and hard-working in their lives. I think we might learn much from them, for their one wish is to be pleasing to God.

Woman. I don't see why one need be miserable about it though. How small their vessel is! Think of being cooped up in it for weeks on end, seasick, perhaps, and tossed about by storms!

Man. They are terribly overcrowded in her, I hear. The other ship which was to have gone with them has proved unfit for the voyage, and the whole company must pack as best they can into the *Mayflower*. But they will brave any hardship now that they have the king's permission to sail to America and found a new England there. They will be free then to worship God in the pure manner, as they call it.

Woman. I thought they had found their new home in Holland. Did not many of them settle in Leyden?

Man. Yes, they founded a colony there, where they worked hard for a living and made woollen goods.

Woman. I should not like to settle in a foreign land and see my children growing up among the children there and learning to speak *their* language instead of English.

Man. That was one of the reasons which made the Puritans leave Holland. Another was that they were mostly farmers who found it hard to learn a new trade. Many could find no work at all. At last they decided to leave Europe altogether. It was difficult to get permission from the king to settle in the new world, but at last it was given, and many of the Puritans left Holland in a ship called the *Speedwell*. They sailed to Southampton, where more settlers were waiting to join them, in this little *Mayflower*. The two ships set out together, but the *Speedwell* did not live up to her name. She

began to leak and they were obliged to put in for repairs, first at Dartmouth and now here. It has been decided to leave the *Speedwell* behind and sail with the *Mayflower* alone.

Woman. All those delays will mean that it will be winter by the time they reach the coast of America, and I have heard that the winters there are very severe.

Man. It is a bad time of year for sailing, too, and they may meet storms.

Woman. Poor souls! My heart goes out to them. It must be hard to leave your homeland knowing that you may never see it again. See how those on shore are weeping as they wave farewell to their friends in the boat. I can see that some of them are in tears too. It is cruel to force Englishmen into exile.

Man. You do not understand. These people go of their own free will rather than obey the law of the land, which says that all men must worship God according to the laws of the Church of England, of which King James is the head. No one is free to do as he chooses in this matter, even if he is a good and honest man like a Puritan. What would become of England if each man broke the laws when he wished? In past days such rebels would have been put to death, and the king shows great mercy in allowing them to find a new home. But he was right when he said that if men would not obey the laws he would harry them out of the land. See, the boat is returning now. The sailors are weighing anchor and the *Mayflower* is putting out to sea.

Woman. They are brave souls to venture out into the unknown, to face who knows what of danger from wild beasts and savage men. I shall remember them in my prayers.

Man. You have a soft heart, like all women. But the king must be obeyed and the laws of the land must be kept.

TEACHING NOTES

If you had been there.—The following imaginary account of the voyage of the Pilgrim Fathers to America as it might have been told by one of them who returned to England will be interesting and informative to the children:

All who love true religion and freedom of worship will listen eagerly to the story told by one of the pilgrims who sailed in the *Mayflower* to found the colony out of which sprang what is now known as New England, on the stern and rock-bound east coast of the American continent. He is newly returned to this country and has a thrilling tale to tell of hardships bravely borne.

"The outward voyage," he tells us, "meant discomfort and suffering for us all. We were crowded (many of us ill with sea-sickness), into the narrow space between decks, with no fresh air and no light except for a few lanterns, or what little light filtered through the open hatchways. In this wretched place a man died and a child was born. To add to our misery, whenever there was a storm—and there were many during the latter part of the voyage—the water leaked through the decks on to our clothes, our bedding and our food, so that we were almost always wet. Once one of the main beams of the ship broke down and we gave ourselves up for lost, but a passenger had brought a great screw on board and with that the beam was secured back into place and the voyage continued. But many of the party were so weakened by what they endured that they died of a fever which broke out soon after we landed.

"You cannot imagine our feelings of joy when one day we heard the look-out give the welcome cry of 'Land ho!' and the sandy headland known as Cape Cod came in sight. We could hardly believe at first that the long and terrible two months' voyage was over. When at last we found ourselves on

shore, our first act was to fall on our knees and thank God, Who had brought us safely over the stormy seas, delivered us from all its perils and miseries, and set our feet again on firm and stable earth.

"Our next care was to provide ourselves with shelter. We chose as the site for our town a place on the coast which an explorer who had visited it many years before had named Plymouth. This new Plymouth reminded us of home and of that English seaport where we had been so kindly treated. We set to work to build a fort and houses; but it was no easy task. We were worn out after the hardships of the voyage, the cold was terrible, food was so short that often at night we did not know where we should get a meal next day, and we lived in constant dread of attacks by Indians. Moreover, many of our number died and we were forced to bury them and then level the mounds over their graves and sow them with grass lest the Indians, watching from the woods, should see how few our numbers had become and grow brave enough to attack us. The *Mayflower* stayed with us in harbour all the winter, but when in the spring she sailed back to England, the sailors had seen so much of our troubles that they spread the report at home that the colony could not possibly last.

"But we were not men whom small things could discourage. The spring brought us new hope. The houses were finished and a row of log buildings stood on either side of the one street in our town. This we christened *Leyden Street* out of gratitude to our kind Dutch friends in Holland. Truly we had much to be thankful for. All the settlers were willing workers, and none a greedy adventurer eager to hunt for gold and treasure, such as has been the ruin of so many colonists. The only gold we had was in the brave spirits of our men, and our



PICTURE SUMMARY

1. The *Mayflower* set out from Southampton in 1620.
2. The Puritans desired simple ways of worship.
3. King James I. threatened to herry them from the land.
4. The Puritans tried to settle in Holland.
5. They had great faith in prayer.
6. They landed on the shore of Cape Cod.
7. The Indians became friendly.
8. The first winters were terrible.
9. They were not men whom small things can discourage.

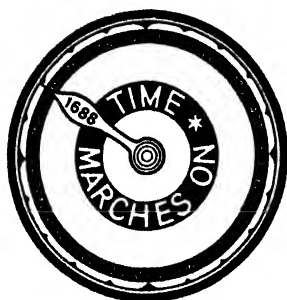


PLATE X

only treasure the fruit of their labours. By degrees, too, the Indians became friendly when they discovered that we treated them fairly, cheating no man and paying for everything we took. One day an Indian chief walked into our camp saying in English, to our astonishment, 'Welcome, welcome, Englishmen.' He had made friends with

English fishermen who had visited the coast in earlier years, and through him and another chief we were able to make a peace treaty with the Indians, a peace which we trust will last long. We believe that God will continue to bless us, as He has done till now, and that by His help we shall be able to found a new nation in this New England."

XI. THE RESTORATION AND THE GLORIOUS REVOLUTION



CHILDREN'S STORY

The hand on the Century Clock now points to the year 1688, the year when the Catholic King, James

II., fled from England and his throne was given to Protestant William, Prince of Orange, and Mary, daughter of James II.

James I. considered that the kingship of England was his by right of descent from Henry VII. He believed that neither people nor Parliament could elect or depose a king, but that he held the title by Divine Right. He loudly proclaimed this doctrine of the "Divine Right of Kings:" he considered that as he had been appointed king by God he was accountable to God alone for his actions, and that he was above the law of the land.

The members of Parliament faithfully assured the king of their loyalty, but they protested: "We hold it an ancient, general and undoubted right of Parliament to debate freely all matters which properly concern the subject." Thus arose the dispute between the king and the people, a dispute which lasted during the greater part

of the 17th century—was the king to reign as an absolute monarch, or was the king's power to be limited by the laws of the land and by the will of Parliament?

The chief trouble between the king and Parliament was over money. The king's income was not enough for the increased business of Stuart times. Parliament determined to control the taxation of the people for by so doing Parliament could control the policy of the king. The king increased his income by means which were considered wrong by the Parliament. If the king could get enough money without the help of Parliament, then he could rule as an absolute monarch.

James I. died in 1625 leaving the disputes concerning taxation and the Divine Right of Kings to be continued by his son, Charles I.

Charles attempted to rule without a Parliament and he raised money in various ways as his father had done. In the end he so angered his people and Parliament that there broke out a civil war which lasted with one long interval for nearly six years. The king's party, known as Royalists were finally defeated by the Parliamentarians, mainly due to the work of Oliver Cromwell, who raised a splendid fighting force known as the *New Model Army*. On January 30, 1649, King Charles I. was executed upon a scaffold erected in front of his London palace of Whitehall.

For the next eleven years England was a Commonwealth ruled by the army under the leadership of Oliver Cromwell, who was called the Lord Protector. Cromwell was a Puritan and during his rule Puritan worship took the place of that of the Church of England. Cromwell died in 1658.

On May 29, 1660, the kingship was restored. Prince Charles, the son of Charles I., had been invited by Parliament to come back from France to rule England. He gladly did so and was crowned as Charles II. This event is known as the *Restoration*, that is, the restoration of the Stuart line of kings.

Parliament now passed most severe laws against the Puritans or *Dissenters* as they were called. The Church of England was again supreme. Avowed Catholics were not allowed to hold any office under the crown.

Charles II. was a very popular king who gained the name of the "Merry Monarch" owing to his gaiety, good nature and easy manner. When he found himself in difficulties about money he secretly received large subsidies from the French king, Louis XIV. At his death in 1685, his brother came to the throne as James II. and he was an avowed Roman Catholic who determined to restore the Catholic religion in England. People and Parliament, however, would not permit this, and in 1688 William of Orange and his wife Mary, a daughter of James II., were invited to bring an army over to protect the religion and liberty of the people. William landed at Torbay and at once the leaders of the army and navy joined him. He marched on London, and when James fled to France, Parliament offered the crown of England to William and Mary. This event is known as the *Glorious Revolution*.

II

Conversation piece.—Let us imagine that we are villagers in the taproom of an inn, in the month of December, 1688. We listen to the talk between the innkeeper, who is

considered to be very wise, and an old villager who is supposed to understand affairs of state.

Innkeeper. So King James has escaped out of the country at last. A good riddance, say I. All the four Stuart kings were either foolish or selfish, and James II., the last of 'em, was both.

Villager. That is true. None of them ever learned, what Queen Elizabeth knew full well, that the king must serve his people. They tried to make the people serve the king. But that will never do in this land.

Innkeeper. It was James I., our first Stuart king, who began the trouble. Perhaps he took after his mother, Mary of Scots—she gave us trouble enough before Elizabeth had her head cut off. Be that as it may, that French minister spoke truly who called her son James "the most learned fool in Christendom." Indeed he was clever enough; but he studied *books* instead of *men*, and so he never knew what his subjects wanted. Parliament would have told him that, if he had asked them; but would he summon Parliament? Not if he could help it. He knew that they would not do as he wanted, and he preferred to govern the country by himself, with the help of favourites.

Villager. That was no easy task, when there was no Parliament to vote him supplies of money. No wonder he was obliged to get it for himself in all sorts of doubtful ways. But nothing would make him change his course. God had made him king, he said, and he had a right to rule as he chose.

Innkeeper. His son, the first Charles, was no better. He too quarrelled with Parliament, and ruled as much as he could without it. He even tried to interfere with men's religious worship; but that was too much. No wonder that civil war broke out.

Villager. Ah yes, I fought in that war when I was a young man. For the Parliament I fought, and in the end we cut off King Charles' head outside Whitehall, in London. Well I remember the day—bitter cold it was, in January.

Innkeeper. Then we tried having no king, but being ruled by Cromwell and the army. For eleven years we tried it, but in the end we wanted a king again, and we asked King Charles' son, who had fled to the Continent, to come back to rule over us. So we had another Stuart, Charles II., on the throne. We hoped that he would have learnt wisdom from his father's fate, and remember the axe and block. But no. He too meant to rule as he chose, and not as the people wished.

Villager. He was wiser than his father, for he knew when to give way. He had suffered so much in his long wanderings that I have heard it said he would do anything rather than start on his travels again.

Innkeeper. It was also said of him that "he never said a foolish thing, and never did a wise one." They do say that he declared himself a Catholic on his death-bed. In any case, he gave us a Catholic king after him, for when Parliament tried to pass a law to prevent his brother James from coming to the throne, King Charles stood by his brother. All our troubles of late years have come from that.

Villager. And yet James being a Catholic need have made no difference if he had been content to serve his people. We liked him well enough when he first became king. He had done good work as an admiral. I fought for him myself in the Duke of Monmouth's rebellion. I was there after Monmouth was defeated, and we found that coward traitor hiding in a ditch and took him to London to be executed. Oh yes, we fought for King James then.

Innkeeper. And yet, with all in his favour, he must needs throw away his crown by doing as his brother and father and grandfather had done before him, and ruling as a tyrant. His worst blunder was to try to make England Catholic against her will. You remember how in his army Romish priests came and went freely, and how he gave Catholics the highest offices in the land. And all against the law, too, for men must show themselves in Church before

they take any office, which no Catholic would do. And he had Titus Oates stood in the pillory, and then whipped at the cart's tail.

Villager. Titus Oates? Ah yes, the rascal who in King Charles' reign spread lies about a pretended Catholic plot to kill the king. We all believed him then, and many innocent Catholics were executed. But James had his revenge. He thought no man could gainsay his will till the seven bishops were too much for him.

Innkeeper. Yes, it was a great day for England when they refused to read the proclamation that all men were to worship as they chose. It sounded fair enough, but we all knew that James meant to free the Catholics, and we should have our country under the Pope in no time. It was of no use for James to clap the bishops in the Tower, for all England was against him. The Londoners lined the banks of the Thames as the barge was rowed down it taking them to prison, and even the sentinels at the Tower gates knelt to ask the bishops' blessing as they passed the grim gateway. How we cheered when the news came that they had been set free! No jury would find them guilty. Even James's soldiers threw their caps in the air.

Villager. It is a wonder, to my thinking, that we English were patient so long under the tyrant king.

Innkeeper. We knew, you see, that he was growing old and must soon die; and then, we hoped, since he had no children, we should have Mary, his daughter, on the throne. She is a good Protestant enough and so is her husband, Dutch William. Since he has been ruler of Holland, he has done all he can to save the Protestants from persecution by the Catholics. It was the birth of James's son that ruined our hopes.

Villager. Yes, for all men knew that he would be brought up a Catholic, and we should have yet another Stuart king, and perhaps many more after him, all believing that they could do as they liked, and that neither Parliament nor people had the right

to check them. But that danger is past now. We have asked William of Orange and our English Mary to come to rule over us in James's stead, and now he is fled that will soon happen. William is already in England, and everywhere he is being made welcome.

Innkeeper. Do you think that when they are king and queen they will try to catch James and cut off his head, as his father was served?

Villager. No, no, William is too wise for that. Best leave him to go on his travels, while King William III. and Queen Mary rule our land in peace.

The end of the story.—The government of the country under William and Mary was settled by the *Bill of Rights*, 1689, which gave more power to Parliament, especially to the House of Commons, and took power away from the sovereign. It also stated that the kings and queens of England must be Protestant.

A famous Act, called the *Toleration Act*, was also passed in 1689. This Act allowed the Dissenters to hold religious services under certain conditions, and from that time more and more liberty has been given, until at the present day the people are permitted to worship God as they please without interference from the Government.

This change of rulers, which is known as the *Glorious Revolution*, ended the long struggle between the king and Parliament. The people wanted a king, but they insisted that he should rule by the advice of his Parliament.

Costume—Cavalier and Puritan.—The fashions adopted by the Cavaliers and Puritans ran parallel. Each side had its degrees of wealth or severity, the difference in appearance varying according to the outlook. (See the picture on page 61.)

The Puritan woman wears under her

gown a linen chemise and petticoat, perhaps a corset or fitted bodice, and home-knitted hose gartered below the knee. Her gown, made of wool in winter and linen in summer, is, save for its fine stitching, quite untrimmed. Her man wears the old style black felt hat, its band and small buckle being not for trimming but to draw it tighter to the head. His white collar and cuffs (or the white linen neck and wrist bands), are to keep the black stuff from rubbing his neck. The plain buttons would be bone, horn or wood. The breeches are close-fitting and gartered at the knee. A strong leather belt, knitted hose, and plain, strong shoes complete a comfortable and effective costume. The shoe buckles were of real use, serving to pull the strap holding the shoe firmly to the foot. His short straight hair was a great contrast to the ringlets of the Cavalier, and probably much easier to keep clean.

The woman on the right has been dressed especially simply to show how fundamentally alike in cut her costume is to that of the Puritan. The bodice fits the figure and the basque or lower portion hangs over the reasonably full skirt. There is a lace or soft lawn collar, and her sleeves are beribboned and laced but the pattern is obviously the same in essentials. Her small child's frock is not the over-elaborate monstrosity in which many of the Royalist children have been painted, but the ordinary small girl's frock in which hundreds of 17th century mothers dressed their children. The silky toy dog on the right is a King Charles spaniel, an expensive whim of the period. The good Puritan cat wears a plain black coat like her master, and keeps it well polished. They are both quiet self-contained people.

The small pictures below show Dutch influence, and date from halfway through the 17th century.

TEACHING NOTES

A letter.—The following letter is imagined to have been written by a Puritan member of Parliament to a friend who has emigrated to America on account of the Puritan persecution. It will help the children to understand some of the causes of the civil war during the reign of Charles I.

August 31st, 1642.

'Dear William,

"This letter brings you strange news: there is war in England between the king and the Parliament. I mean real war, with actual fighting. It is a terrible business, for the country is divided into two, and even members of the same families have taken different sides. Father is fighting against son, and brother against brother. It is a dreadful thing for the people of a country to take up arms against their king, but we have had no other course, for the liberty of the land is in danger. I must tell you how the king has brought this about.

"He has offended the people of England on many matters. There is the Church, for one. Archbishop Laud has interfered with our religious observances. He forced us all to use one service book, and those who refused were fined or imprisoned. The Scots rebelled. They signed a *National Covenant* to resist Laud and took up arms, for they were determined now to get rid of all bishops. The king had much trouble to quell the rising, for the soldiers he sent were but half-hearted, since many of them think as we do, and would rather have sided with the Scots. The Scots invaded this country and the king had to pay them to leave it, but that was not easy, for he had no money. So he called a Parliament to ask for some, but we had too many grievances to discuss before we would give him any. The Scots had him at their mercy, so at last he had to listen and to yield.

"Like his father before him, the king had been raising money without the consent of Parliament. He enforced old laws that had been long forgotten and fined those who would not keep them. He sold monopolies to companies of traders, he forced rich men to lend him money (which he never repaid) and imprisoned them if they refused, and worst of all, he levied *Ship Money* on all the towns in England, using the weakness of our navy as his excuse. We did not object at first when he asked the ports to provide ships or money for ships, for indeed our merchant shipping has been much troubled of late by Barbary pirates, and it has long been the custom for the ports to provide for the defence of the realm. But when the inland counties were taxed, it soon became clear that if the king were allowed to get money in this way, he would never call another Parliament.

"Mr. John Hampden saw that the liberties of the people were in danger, and refused to pay. He was brought to trial, but lost his case. All the same, the matter was much talked of and awakened the people to the knowledge of the king's injustice. So when the king did at last call us together to ask for money, we remembered these things. We knew that the king's advisers were largely to blame, so we rid ourselves of them. Laud we sent to the Tower and Strafford we executed because he was far too strong and dangerous a man to leave alive.

"We made the king promise that a Parliament should meet every three years and that this Parliament should not be dissolved without its own consent. We declared illegal the levying of Ship Money and other taxes without our consent. We abolished the Court of the Star Chamber, which had prevented the free speech of opponents of the king and his ministers, and the Court of High Commission, which



COSTUME—CAVALIER AND PURITAN

had been formed to direct the Church in England and had aided Laud in his measures against us. We were determined the king should learn that his ministers are answerable to the people as well as to him.

"Ireland has always been a trouble to England, and at that time the Catholics rebelled against the Protestants. The king wanted to send an army against them, but we

dared not let him, lest he should use it against us. We felt it was time the king's misdeeds should be known to the people. We wrote them all down on a paper we called the *Grand Remonstrance*, and read it in Parliament. Then we found that opinion in the Parliament was divided, for though we had been united against the king's policy over Ship Money, it seemed that some supported

PICTURE SUMMARY

1. At first all went well for James II.
2. The Duke of Monmouth fled from the battlefield.
3. Titus Oates was punished for his lies.
4. James forgot the fate of his father, Charles I.
5. He encouraged the Catholics to talk to his soldiers.
6. The clergy were ordered to read the Declaration.
7. Seven bishops were arrested.
8. Protestant William of Orange.
9. James II. fled to France.



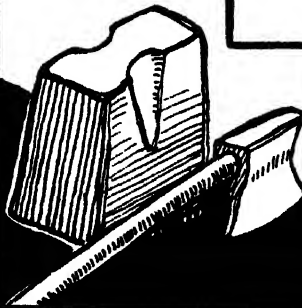
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6



7



8



9

the king over the Church. The debates were long and heated, and more than once swords were out. Most of the Londoners sided with the Parliament, and there were scuffles in the streets between the king's supporters and ours, and members of Parliament were molested. We complained to the king, and he pledged his word to protect us, but that same day he ordered the arrest of Mr. Hampden and four other leaders of the Commons, and their impeachment for high treason. The next day the king came to the House to seek them, but they had escaped. "The birds are flown," muttered

the king, and he could not find them. We knew then that this war could not be avoided, and all the spring and summer we have been making preparations. Now the king has raised his standard at Nottingham, and the struggle has begun. The king shall see whether he or the Parliament shall rule the people, and whether the Church shall be governed by bishops named by the king, or by elders elected by the people! When we have settled these matters, as no doubt we soon shall, my dear William, you will be able to return to your native land to live in peace. "John."

XII. CLIVE IN INDIA AND WOLFE IN CANADA



CHILDREN'S STORY

I

The hand on the Century Clock points to the year 1763, the year when was signed the *Peace of Paris*,

when ended the long war between Britain and France for the winning of lands in India and America.

India.—For a century and a half, England had had trading interests in India, conducted by the East India Company which had received its charter in 1600, at the close of Queen Elizabeth's reign. This company had depots or "factories" at Madras, Bombay and Calcutta, and through them cotton, indigo, spices, precious stones and other luxury goods came into England. A similar French company also had commercial interests in India with trading stations at Pondicherry near Madras and at Chandernagore near Calcutta.

For two hundred years, India had been ruled by the Mogul dynasty of kings, but when the last of the efficient Mogul kings died at the beginning of the 18th century, there was much quarrelling and fighting between the different native princes. A French governor of Pondicherry, Dupleix, began to take part in the native wars, and he then attacked the British, who at this time were traders and not soldiers. Thus began the trouble between the British and the French, to decide which nation should be supreme in India.

America.—Since the days of the discovery of the New World European settlers had been busy colonising the east coast of America. The British had established thirteen colonies along the coast between the St. Lawrence river in the north, and the Mississippi in the south. The French also had made settlements in America. They occupied territory in Canada in the north, round about the mouth of the St. Lawrence river where the town of Quebec grew up; and in Louisiana in the south, where they built New Orleans at the mouth of the Mississippi. Behind the

British colonies to the west was a chain of mountains, and beyond that again, great forests full of wild beasts and savage Red Indians. The French had built a chain of block-houses in the forests to join up their northern and southern colonies. These forts kept the British to the coast. The French made friends with the Red Indians, trading with them for furs and skins, and hoping that if ever the British tried to take the forest land, the Indians would fight for the French.

In the north especially, the British were rivals for the fur trade; thus, even after peace had been made in Europe, at the end of the *War of the Austrian Succession*, there was still war between Britain and France in America in 1756. This was one of the causes of the *Seven Years' War* which broke out in Europe. The other cause was the fact that Prussia was allowed to keep Silesia which had been taken from Austria. Maria Theresa went to war with Prussia. France and Russia joined her, and Britain joined Frederick the Great of Prussia. It was a good thing for Britain that France was kept busy at war in Europe at that time, for she was then unable to give much help to her colonies in America. Britain was able to strengthen her navy and defend her colonies, which she did under the able guidance of William Pitt who had become Secretary of State, and practically Prime Minister. His splendid management of the war helped to make Britain supreme on the sea.

Meanwhile, in America, the French had built Fort Duquesne to command the valley of the Ohio river. This valley was the easiest route by which the British could extend westwards beyond the mountains, and the British colonists knew that unless they captured it they would in the end be driven out of America by the French. Two attempts were made to take it, one by a young soldier called George Washington, the other by General Braddock. Both attempts were failures, and the second ended in a massacre by the Red Indians.

William Pitt determined to end this struggle by taking Canada from the French.

He supplied Frederick the Great with money to help him to keep the French busy in Europe, and he dispatched new commanders to Canada. We will now hear how the colonists fared in India and Canada.

II

Conversation piece.—It is a summer afternoon in the year 1763 and two old soldiers, who have fought in Britain's wars against France in India and Canada respectively, are sitting in the sun discussing their fighting days.

1st Soldier. So you fought with Clive in India. I have heard that he was as much beloved there as our own Wolfe was in Canada.

2nd Soldier. Yes, the English soldiers and the sepoys—they are the Indian soldiers, you know—would do anything for him. He was a great general and a born leader, although he began life as a clerk.

1st Soldier. A clerk? I never knew that.

2nd Soldier. Yes, his father sent him out to be a clerk in the warehouse of the East India Trading Company at Madras. They say it was because he was such a scapegrace at home that his family could not manage him. He got into every possible kind of scrape, from breaking windows to climbing to the top of the tallest steeple in Market Drayton, where he lived.

1st Soldier. The life of the office would not suit a lad like that, I'll be bound. That type of boy is all right so long as he has plenty of interesting and adventurous work to keep him busy, but you can't keep him cooped up in an office writing letters and adding up figures.

2nd Soldier. You're right there. Young Robert was wretched, so wretched that I've heard that he tried to shoot himself. But the pistol didn't go off, and he said to himself, "Perhaps there's work for me to do in life after all." And indeed there was. It was soon after that that the trouble began with the French.

1st Soldier. We fought the French in Canada, too. They wanted to drive us out of America. What was your reason for fighting them?

2nd Soldier. Because they were threatening to take away our trade. They, too, had trading settlements, at Pondicherry and at Chandernagore, near Calcutta, and between us and them there was great rivalry, which grew at last into actual war. Two native princes claimed the south-east district of India, and we supported one and the French the other. By this time Clive had given up his clerk's job as hopeless, and had become an officer in the little army which protected the Company's possessions against Indians and Frenchmen. Now was his chance to show his mettle. He persuaded the Governor to let him lead his army to capture Arcot, the capital, a place of broken walls, low useless battlements and dry ditches, but valuable to the Indians. A small force of only five hundred marched out from Madras, led by Clive and commanded by officers who were mostly clerks, as he had been, and had never been to war before.

1st Soldier. And they took the town, didn't they?

2nd Soldier. Yes, boldness paid. There was a terrific thunderstorm on the way, but Clive and his men marched through it, and the Indians were so amazed that they fled, declaring that the heavens themselves must be fighting for the British. Clive held the fort, too, in spite of all the enemy could do by their greater numbers, their fighting elephants, and the cutting off of food supplies. When the food gave out, and only a little rice was left, the loyal Indian soldiers told Clive that the British should have that and they, who needed less food, would be content with a gruel made from the water in which the rice was boiled. Such was the love which Clive's men felt for him. But before long a native prince came to the rescue. "I never thought," he said, "that the British could fight; but since they can, I will help them." The Indians thought of us only as traders till Clive came; but he showed them that Englishmen can fight as well as trade.

1st Soldier. Did Clive win any more battles?

2nd Soldier. Oh, yes, many more, but the hard work and the hot climate were too much for him. He was invalided home.

1st Soldier. What had the governors of the Company to say to him? They must have been pleased with his success.

2nd Soldier. Yes, indeed, they were. They presented him with a fine sword having the hilt set with diamonds.

1st Soldier. But he went back to India again?

2nd Soldier. Yes, he was appointed governor of the station at Fort St. David, but he never took up the post. On his arrival at Madras, he heard of great happenings at Calcutta. The English, fearing another war, were fortifying the place. The ruler of Bengal, Surajah Dowlah, objected to this. He swooped down on Calcutta with a large army and in three days the place fell.

1st Soldier. That was indeed bad news for Clive to hear. What did he do?

2nd Soldier. He at once set sail for Calcutta. I was with the army sent against Surajah Dowlah. We had only three thousand men with eight guns, while he had fifty thousand men with fifty guns. The armies met at Plassey. I can remember Clive sat brooding under a tree for a long while before he made up his mind to risk a battle. But again boldness paid. Our guns were better than theirs, and when half the enemy came over to us, Surajah Dowlah fled, and we were in possession of Bengal. By 1760 all the French settlements in southern India were in our hands.

1st Soldier. That year was important for us in Canada too. It was in 1760 that Montreal, and with it the whole of Canada, fell into our hands, thanks to the victory of our great General Wolfe at Quebec.

2nd Soldier. He was a great soldier, too, they tell me.

1st Soldier. Indeed he was, and bred to it from boyhood. He served in many a famous battle, and in one, when his commanding officer ordered him to massacre his prisoners, young Wolfe told him boldly to "be his own butcher." He feared no man, and was not

afraid to be different from others. He did not, for example, wear a wig, like everyone else, and this and other oddities made his fellow officers think he was mad. "If he is mad," King George II. is said to have declared, "then I wish he would bite some of my other generals." A poor feeble lot they were. We should never have taken Quebec under their command.

2nd Soldier. You were at the taking of Quebec, weren't you? Tell me how it happened.

1st Soldier. I shall never forget my first sight of Quebec. I didn't see how we could ever take it. The town lies at the top of steep cliffs protected on the west side by the so-called Heights of Abraham and on the east by the St. Charles river. And it certainly was a difficult task. The French general Montcalm had fortified the place so strongly that though we tried again and again to break through the defences we always failed. September came, and we were almost in despair. If we did not take the town before winter we knew that we should not capture it at all. Our general decided to make one last attempt. He thought of a plan. He would take his army up the Heights of Abraham by the one possible path—a rough narrow track not very well guarded by a picket, for the French thought that it was impassable. He first issued orders which made Montcalm think that he meant to attack the fortifications once more. Then, while the attention of the French army was occupied, the general secretly took a great force of men farther up the St. Lawrence river—Quebec lies between two rivers, you know—to a camp about eight miles away.

2nd Soldier. That was clever. And I suppose you came down the river again to attack the town.

1st Soldier. Yes, that's just what we did. I shall always remember that dark night, when we embarked, four thousand five hundred of us, in open boats, and rowed silently downstream. Once there was a terrifying moment, when a French sentry challenged us from the bank. But a Scottish

soldier replied in French, and so the danger passed. I was one of the rowers in the general's boat, and I was amazed to see how quiet and calm he was at this moment when so much depended on him. He was actually reciting poetry in a low voice to his officers—Gray's *Elegy in a Country Churchyard*, it was I remember,—I have often read it to myself since, and it always brings back that night on the St. Lawrence river. When he came to the line, "The paths of glory lead but to the grave," he said to his officers, "Gentlemen, I had rather have written that poem than take Quebec."

2nd Soldier. What a remarkable man he must have been!

1st Soldier. At last we reached the path up which we were to climb. The general led the way up what was for him in truth a path of glory leading to the grave. The rest of us followed as best we could, pulling ourselves up by tufts of grass and rocks. The sentries at the top were so amazed to see us that they fled. At last all the army had reached the Heights, and was drawn up in battle array. Montcalm marched his men to the attack, and the fight was short and furious. Our men had orders to hold their fire till they could see the "whites" of the enemy's eyes. Then, when only about fifty paces lay between us and the French, our men loosed a fearful volley, which tore great gaps in the charging ranks. Another volley widened the gaps, and the bayonets did the rest. Soon the French were fleeing for the fortifications. But a group of us was gathered round our general who lay fatally wounded with a bullet through his lung. "See, they run!" cried one of the officers. "Who run?" asked Wolfe, raising himself up. "The enemy," we told him. "Cut off their retreat," he ordered; then, as he sank dying into his friends' arms, we heard him whisper, "God be praised—I can die in peace." The French general, Montcalm, was killed also and he was buried on the battlefield.

2nd Soldier. My friend, you and I have been greatly honoured to serve under two such men as Robert Clive and General Wolfe.

III

The end of the story.—During the wars in India and Canada, Britain had won several sea-battles and the British fleet was supreme. Frederick of Prussia had been fighting for life against his powerful enemies, France, Austria and Russia. Fortunately for Frederick, a new tsar, Peter III., ascended the Russian throne, and he sided with Prussia.

In 1763 the Seven Years' War came to an end by the signing of the *Peace of Paris*. The main results of the war on world history were:

(1) Clive's victory at Plassey laid the foundation of the great Indian empire.

(2) Wolfe's victory at Quebec established British rule in North America.

(3) Frederick laid the foundation of Prussia as a great European state.

Although Clive had won military power in Bengal the struggle did not end there. For many years, the British struggled to keep the French out of India and at the same time engaged in a long series of wars with native rulers. Much good work was done by Warren Hastings, when in 1773 he became Governor General of all the East India Company's possessions in India. By his vigorous military action he managed to secure the power Clive had won. In the years before and after 1800, when Britain was once more at war with France, the British determined to put an end to France's hopes of an eastern empire, and under the leadership of the Marquis Wellesley, who became Governor General in 1798, the French power in India was finally suppressed.

TEACHING NOTES

1. Synopsis (1740-1763).—The war with Spain, began by Walpole in 1739, soon merged into the greater *War of the Austrian Succession*. Here France and Britain took opposite sides and it soon became clear that more was involved in the struggle than at first appeared. The two countries realised that they would have to settle the issue as to which country was to be supreme in America and India, Britain or France. The question was decided in Britain's favour by the *Seven Years' War* (1756-1763)—a war in which Plassey and Quebec were two of the high-lights, the others being Minden, Quiberon Bay and Lagos Bay. During this period England also won the supremacy of the seas, which enabled her to foil France in subsequent wars, and especially in those waged against Napoleon.

2. Anglo-French rivalry.—The following table, if worked out point by point, gives a class a good idea of the amazing amount of time lost by Britain in wars with France between 1714 and 1815:

1. Put the dates at the head and foot of a sheet of paper.
2. Work out the number of years covered.
3. Put in the wars with dates.
4. Work out the length of each war, roughly.
5. Total the years.

		1714	
Years	6	1742 } 1748 }	Austrian Succession.
	7	1756 } 1763 }	Seven Years' War.
	6	1777 } 1783 }	French part of American War.
	8	1793 } 1801 }	First part of Revolutionary and Napoleonic Wars.
	12	1802 } 1814 }	Second part of Napoleonic Wars.
	—		
Total	39	1815	

3. The situation overseas.—(a) The pupils should draw an outline map of India and insert Bombay, Madras, *Pondicherry*, Calcutta, *Chandernagore*. The French "factories" (in italics) should be distinguished from the British. The names mentioned in Clive's story should be put in as they occur.

(b) Make plain the following facts, which are the background to Clive's career:

In 1707 the last efficient Mogul Emperor died and his lands were split up among different native princes who often quarrelled among themselves. The French, hitherto traders, now began to meddle in politics. One of them, Dupleix, governor of Pondicherry, from 1741, went further: he trained native soldiers in the ways of European warfare. Meanwhile the English, unaware of the new danger, neglected military measures. True, they maintained a small army, but this, until Clive came on the scene, had small reputation.

(c) Draw a map of the eastern coast-line of North America from the Newfoundland and St. Lawrence area down to Florida and Louisiana. Put in the Mississippi basin, the Alleghany mountains and the Lakes. Mark Canada and Quebec. From Newfoundland to Georgia mark thus—THIRTEEN COLONIES. (It serves no useful purpose to put in their names at this point.)

(d) Make plain the following facts, which lead up to Wolfe. From the time of the Pilgrim Fathers onwards there had been much activity in the New World and many more colonies had been founded there. Some like Maryland, Carolina and Georgia were aristocratic foundations; others sprang from the endeavours of people who fled overseas to escape religious persecution; e.g., Massachusetts. New York and New Jersey were taken from the Dutch. The Quaker Penn gave his name to Pennsylvania.

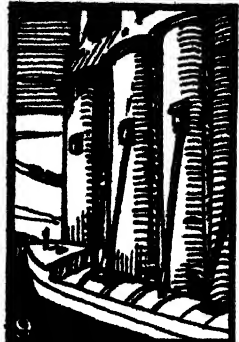
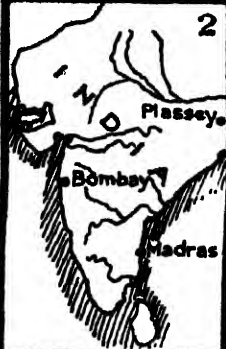
Meanwhile the French had kept pace with the British, founding Quebec in 1608 and Louisiana in 1682. A glance at the map shows how they thus threatened to encircle the British and prevent expansion inland; which is exactly what they tried to do:

block-houses manned with soldiers began to appear in the Ohio region and near the Lakes. The most important of these was Fort Duquesne, built in 1754, at a moment when an uneasy peace prevailed in Europe. On the eve of the *Seven Years' War* an English force tried to take Fort Duquesne. Ambushed, the expedition was cut to pieces. Later, when the war was in full swing, the Fort was taken with many others. Quebec fell—as we know—in 1759. Actually its fall was the peak of a military campaign begun in 1758. The scheme was for Wolfe to come up the river at Quebec while General Abercromby came overland. He was repulsed at Ticonderoga, however, and operations were delayed for a year.

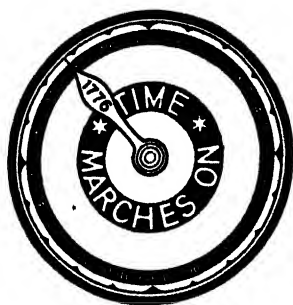
4. William Pitt.—Pitt had said to a colleague in office, "I know that I can save this country and that no one else can," and he soon proved that he was right. On account of the bribes given by former ministers to retain the goodwill of the members of Parliament, Pitt had only a scanty following in the House of Commons, but he was the most popular man in England, having won the confidence of the people because he could not be bribed. He refused to appoint men to offices in the Government except by merit, and he did not, as many former ministers had done, use his position to enrich himself. Pitt proved himself a great national leader and a great war minister. He was the first statesman to realise that Britain ought to be a great colonial power and that the way to success lay in the command of the sea. He had a remarkable capacity for choosing capable officers to command on land and sea, and he took care to supply them with sufficient troops and ships for their tasks. He showed his trust in his people by sending back the Hanoverian troops and by relying on the English themselves to defend their country. He inspired the leaders with his own spirit of conquest, and the result was soon seen. He made England master of Bengal in India, Canada and the Seven Seas, and he became known to every English patriot as the "Great Commoner."

PICTURE SUMMARY

1. Clive began as a ne'er-do-well clerk for the East India Company.
2. He laid the foundation of British rule in India.
3. He trained Indians to fight as English soldiers.
4. Clive was presented with a fine sword.
5. Wolfe was a young officer with new ideals.
6. Quebec was well fortified by nature.
7. Wolfe won Canada for England.
8. He made an unexpected attack on Quebec by night.
9. Canada is now one of the world's granaries.



XIII. THE FOUNDING OF THE U.S.A.

CHILDREN'S
STORY

The hand on the Century Clock points to the year 1776, the year when the colonists in North America

voted the *Declaration of Independence*. Later on the colonists decided that they would no longer be under the rule of the king of England but that they would have a President of their own. They formed a republic under the title of the "United States of America."

The king at this time was George III., who reigned for sixty years, from 1760 to 1820. Unlike the first two Hanoverians he had been born in England, and as he said at his accession he "gloried in the name of Briton." Unfortunately he was small-minded, badly educated and most obstinate. For the last time in English history the king became the avowed head of a political party. George III. was determined "to be a king." He summoned or dismissed his ministers almost as he pleased. It was largely owing to the king's interference with the Government that America was lost and became a republic.

There were at the time thirteen English colonies on the Atlantic sea-board of America. There had been a great deal of trouble with the French who were rivals of the English for the new lands. After much fighting the French were driven out. Many of the English settlers had become prosperous farmers and landowners. Trade was rapidly expanding, but the most important part of the colonists' trade could be carried on only through Britain, the Mother Country, and this they strongly resented. There were other causes for complaint.

While the colonists were harassed by the French and the Indians, they were glad to have an army of British soldiers to defend them. After the conquest of Canada by Wolfe, they felt that they no longer needed British protection. They had had some military training, and thought that they could raise their own armies for defence if need were. The British Government, however, felt that an army should be maintained in readiness for possible French attempts at reconquest, and for the support of this army Parliament imposed a *Stamp Duty* on the colonies, 1765. That is, all documents such as deeds, licences or newspapers had to bear a Government stamp. Not only the colonists resented this, but even some ministers at home opposed it, and after a time the *Stamp Act* was repealed.

Ill-feeling was later aroused by a number of duties levied on goods imported by the colonists, 1767. The colonists objected to paying these duties, and after a time the British Government repealed all the duties except that on tea, 1770. The Government kept this tax to show that they had the *right* to tax the colonies. The colonists were determined not to be taxed by the British Government because they had no members of their own in Parliament. "No taxation without representation," they cried.

In 1773 a party of colonists destroyed a cargo of tea in Boston harbour and then the port of Boston in the colony of Massachusetts was closed by the British Government, 1774. This colony appealed to the others to unite with them to defend their liberties by force. In 1775 war broke out between the colonists and Britain. At first the colonists had no intention of separating from the Mother Country and setting up a republic, but later it was found that to win the war they must get foreign help against the British. Then they had to declare that they would break

away from Britain altogether, and on July 4, 1776, Congress voted the *Declaration of Independence* in which it was stated that, "We, the representatives of the United States of America . . . solemnly publish and declare that these United Colonies are, and of right ought to be, Free and Independent States."

II

Conversation piece.—Let us imagine that it is the year 1776, and we are among a crowd of busy citizens in the streets of London. We enter a coffee-house and listen to the two men discussing the news. They wear coats with long skirts, knee breeches, coloured waistcoats, stockings and buckled shoes. Round their necks are cravats, and their wigs are topped by three-cornered hats.

1st Man. Have you heard the latest news of the war in America?

2nd Man. Is it a war? I knew that the colonists had rebelled, but I thought that our soldiers would easily put an end to it.

1st Man. We all thought the same, but the matter is more serious than we imagine, judging by the news that was brought by the ship which arrived yesterday. It appears that the colonists have issued a *Declaration of Independence*, in which they said that they will no longer be ruled by Britain. I personally don't blame them. It has never seemed to me fair to expect them to pay taxes to us when they send no members to Parliament, and I think they ought to be allowed to trade freely with any country. Now most of their trade can be done only through Britain.

2nd Man. I don't agree with you. After all, they are Englishmen by blood, and their first duty is to England. It is very wrong to smuggle goods through to other countries as they do without paying duty on them. I was glad when the Government put a stop to it. And as for taxes, why, the only reason for the *Stamp Act*, which they made such a to-do about, was to help in paying for an army to defend them against the French and Indians. Surely they could not object to that!

1st Man. They did object, all the same, and the tax had to be withdrawn. The Government was obliged to withdraw all the other taxes too, till at last only the duty on tea was left. They tried to make that acceptable by arranging for the colonists to have their tea extra cheap; but they would have none of it. They denied that the English Government had any right to tax them at all. Do you remember the "Boston tea-party," as it was called, when a ship laden with cheap tea arrived in Boston harbour and colonists disguised as Red Indians threw the tea-chests into the sea? The Government closed the port of Boston after that, and put the colony of Massachusetts under martial law.

2nd Man. And quite right too. The colonists must be taught a lesson.

1st Man. Yes, but the other colonies sent them help, and a rebellion which might have been settled at the beginning, if we had acted wisely, has now grown into a war.

2nd Man. That war will not last long. King George has the finest soldiers alive and the finest sailors afloat, and they are kept in first-class order by being flogged when they don't obey. That's the way to treat rebels! The colonists won't be able to stand against our trained troops.

1st Man. I am not so sure. It is true that the Americans are badly trained, badly armed and ill-fed, and that they often go home when their term of service is over, even if an enemy is facing them. But they have a splendid leader in George Washington. They say he is as hard as nails from living so much in the open air, and that he can endure any amount of fatigue and all kinds of weather. His greatest gift of character is that he never gives in, and so he is never beaten. No, I'm afraid things are more serious than you think and that if we don't take care we shall lose America. That might not be altogether a bad thing. Children cannot always be tied to their mother's apron strings. The colonies no longer need our help and protection, since they have grown strong enough to protect themselves,

and the French, who might have interfered with them, have been driven out of Canada. If they were independent we here in England should be saved all the trouble and expense of governing them.

2nd Man. What! Lose the richest part of our empire? King George III. will never consent to that, and no more will the traders who buy and sell from the colonies. Lose America, indeed! What a foolish notion!

III

The end of the story.—The English did lose the American colonies and the independence of the United States was recognised by Britain when peace was made in 1783. The first President was George Washington.

In the early stages of the *War of Independence* the British had the advantage, and Washington's forces suffered many defeats. He had great difficulties to face, but later he was helped by the fact that Britain had no friends. "Every nation in Europe wishes to see Britain humbled, having all in their turn been offended by her insolence," wrote an American diplomatist. The American war was their chance, and one after another, France, Spain and Holland opened hostilities. Britain lost command of the sea, and with enemies on all sides, no longer had the power to withstand the Americans.

The conversation below is supposed to take place between two citizens of the United States in 1799. They are dressed in deep mourning for their President, George Washington, is dead.

1st Citizen. When shall we see his like again, or find anyone so gentle and modest and yet so firm and courageous?

2nd Citizen. He was the best man we could have chosen to command our forces against the British troops. Only he could have turned our rabble into an army.

1st Citizen. And what a rabble! Do you remember the winter of '77. We had marched and marched till there wasn't a sound pair of boots in the whole regiment. Our clothes were in tatters, and at one time we had no bread for three days.

2nd Citizen. Some of our own people treated us shamefully. They sat on the fence to see which way the war would go. We should never have won without French help.

1st Citizen. Don't forget the Spanish and the Dutch. Every nation in Europe was against England. I can't help feeling sorry for King George. It must have been a great shock to him.

2nd Citizen. No doubt about that. He thought it would be an easy matter to beat us, and if he had sent out enough troops at the beginning I expect he would have done so.

1st Citizen. That was the turning-point when General Burgoyne came down from Canada with his four thousand men and had to surrender at Saratoga.

2nd Citizen. Perhaps that's true, but it was when England lost command of the sea that really settled the war. What must they have felt in the Old Country when the French and Spanish fleets sailed up the Channel and the British dared not attack them!

1st Citizen. Our Washington settled the business at Yorktown. He had Cornwallis blockaded on land and the French fleet blockaded the sea. Of course the British had to surrender.

2nd Citizen. We Americans will never forget our great President. I knew him well. I fought by his side and I have stayed at his country house.

1st Citizen. That is interesting. I knew he had a house in a plantation where he grew grain and tobacco. Tell me about your visit.

2nd Citizen. It was strange to find the great George Washington living the life of a quiet country gentleman when he might have kept princely state. It would have been very hard for another man to resist the temptation to accept the rich rewards which were offered him. He might even have been a king, they tell me. But he preferred to live quietly with his wife and step-children, riding, hunting and playing games in the daytime and dancing or playing

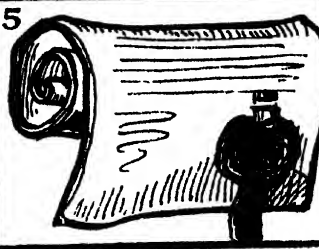
PICTURE SUMMARY

1. During George III.'s reign the American colonies formed a republic.
2. A British red-coat, one of the king's soldiers.
3. At the time the British had a good navy.
4. There were thirteen British colonies along the Atlantic sea-board.
5. The colonists objected to the Stamp Act.
6. Men dressed as Red Indians destroyed the cargo of tea.
7. George Washington led the colonists to victory.
8. The English general surrendered at Yorktown.
9. The colonists issued a Declaration of Independence.



4

5



cards in the evening. He kept his estates in wonderful order and every penny he spent was accounted for. He loved the simple life, though, mind you, when he chose he could be magnificent enough. I remember once seeing him appear at a reception in a black velvet suit with gold buckles, yellow gloves, powdered hair, a cocked hat with an ostrich plume in one hand, and a sword in a white leather scabbard. He looked every inch a President when he drove out in his coach with six smart horses, and footmen in rich livery.

1st Citizen. They say he was very kind to his servants.

2nd Citizen. Indeed he was. There were a great many slaves on his plantation, but he took care of them all, and saw that they had good food and clothing—not like some men who do not care how the slaves live so long as they work and make money. I have heard that in his Will he has ordered that after his wife's death all his slaves are to be set free.

1st Citizen. Setting slaves free? Why, that is unheard of. What a generous man he must have been.

2nd Citizen. Indeed he was. Men say that he was first in war, first in peace, and first in the hearts of his countrymen, and I know that that is true.

TEACHING NOTES

1. Taxation.—The story of the Colonial struggles gives the teacher an opportunity to explain the meaning of Taxation and its chief uses. The following method has given good results:

(a) You know these things and people because you see them or hear of them every day:

Soldiers. Sailors. Policemen. Members of Parliament. Teachers. Judges. Airplanes. Cannon. Post-Offices. Telephones.

(b) These things and people are meant to help Englishmen and Englishwomen; e.g., Soldiers protect them from enemies; Policemen from criminals. Post-offices provide a system of getting messages about the country; Telephones are an even quicker system.

(c) All these things and people have to be paid for. An airman needs a wage. Cannon are costly. So are battleships.

(d) Who then should pay for them? Clearly the people who are helped by them. Your parents *now*. You, when you are of age to earn money.

(e) How does the Government get money from you? Chiefly by two kinds of taxation—two ways, that is, of making you contribute your share:

1. DIRECTLY: Parliament makes a law: out of every £1 of your income you must pay a certain amount, say 2s. 6d. This is called Income Tax; and, when there are many expenses to meet, Income Tax is usually high.

2. INDIRECTLY: Parliament says that there must be a small sum paid on every article of a certain kind brought into the country—tobacco, let us say. Now suppose a merchant brings tobacco into the country. He pays the sum required on every pound, then adds that to the price he charges to everyone who buys his tobacco. Smokers *indirectly* pay the tax or duty.

Question: Which was the Stamp Tax in 1765? Direct or Indirect?

2. George Washington.—Born in 1732, George Washington witnessed, and took a leading part in, most of the chief events of American history from 1750 to the close of the century. At first a surveyor of lands, he took on a military career just when the French were beginning to block British expansion westwards. So Washington was with General Braddock in the ill-fated attack on Fort Duquesne in 1755. Here he won

some distinction. Later he helped to capture the place in the *Seven Years War*. When that was over he lived as a country gentleman until the dispute with England brought him into the field to command the colonials in war. His countrymen at first gave him a very hard time: their levies were undisciplined, they hated to go far afield and melted away

on any excuse. But Washington always stood firm, even in disaster. Little by little he regained ground; finally Yorktown crowned his efforts. Then, when the United States came into being, Washington was the first President. Again he had many difficulties in the infant State but he overcame them all. He died in 1799.

XIV. JOHN WESLEY, THE GREAT METHODIST



CHILDREN'S STORY

The hand on the Century Clock points to the year 1791, the year of John Wesley's death. He was

the chief means by which a great religious revival swept over England and changed the lives and characters of a vast number of people.

In the year 1714, a new family of sovereigns, called *Hanoverians*, came to the throne. The first of them was George I. whose mother Sophia had married the *Elector of Hanover*, a state in Germany. George I. was fifty-four years of age when he came to the throne. He spoke no English and left the government almost entirely in the hands of his ministers. His son, George II., who followed him in 1729, followed his example.

In a former chapter (p. 56) we read a good deal about the religious strife of the Stuart times and now when there was no more trouble and most people could worship as they wished there was little religious enthusiasm. Among the highest and the lowest in the land religion was scoffed at. It was

only among the middle classes that the old stern Puritan spirit lived on.

Then John Wesley made his appearance and brought about many changes.

II

Conversation piece.—It is the year 1791. Let us imagine that we are listening to the story of a very old man living at Epworth in Lincolnshire where John Wesley was born.

"And so Mr. Wesley is dead! I am a very old man, and yet it seems but a short while ago since he was little Jacky Wesley, the rector's fifteenth child, though it must be eighty years and more, for he was born in 1703. When did I first see him? Why, it must have been the night of the fire at the rectory. I was a small boy then, and went with the rest of the villagers to watch the blaze. You must know that Jacky's father, the Reverend Samuel Wesley, was not loved by everyone here. There was a great deal of wickedness and drunkenness in Epworth then—as there was all over England before Mr. Wesley and his friends started teaching men better ways of living—and Mr. Wesley often told people what he thought of it. That they did not like, you may be sure. Twice before they had tried to burn down the rectory, and this time, of which I am telling you, they succeeded. The rector and his wife managed to get

the children out, though some of their clothes were scorched; but when they counted the family, to their horror Jacky was missing! The flames were by this time roaring in the thatch and the rector was in despair, when someone gave a cry, and there was the little boy's white face at an upper window.

"There was no ladder, but one man stood upon the shoulders of another, and somehow Jacky was lifted down, only just in time, for immediately afterwards the roof fell in. Then I remember how the rector, gathering his family round him, said, "Come, let us kneel down and give God thanks. He has given me my children. Let the house go." Mrs. Wesley—she was a God-fearing woman, though somewhat stern with her children—used often to say that God had saved Jacky for some special purpose. And so He had. If Jacky had died that night, England would have suffered a great loss.

"Well, Jacky grew up among us, and many a game he and I had together. He was full of fun, but there was something serious about him too. He liked everything to be in order, and always had a plan for what he did. I remember once a lady offered him some cakes in between meals. "Thank you," he said, "I'll think of it." It was not part of his plan to eat except at mealtimes. I once heard his father say, "Our Jack will never do anything unless he can give a reason for it." In this he was different from the rest of the people round him, who lived carelessly and did much as they pleased.

"At last Jack had to go away to school, and for a time I saw him no more. I believe he had a hard time there. He told me afterwards that he did not always get enough to eat, but that he kept his health by running three times round the playground every day, as his father had bidden him. It was just the sort of orderly thing that Jacky would do, and I believe that it was the care he took of his health as a boy which made him able to do such fine work as a man. Then he went to college, and we

heard that he was doing very well there. His tidy ways must have helped him—I can imagine him pinning up a time-table of work on the wall of his study. He was particularly concerned about his religious life. He found some other students who felt as he did about it, and together they formed a sort of club.

"Things were not right in the Church in those days—very different from what they are to-day. Few people went to church then, and small wonder, for many of the clergy seemed to care more for drinking and fox-hunting than for their people. They preached only when they must, and poor half-hearted stuff it was at that. Those who went to hear them behaved carelessly, stacking their hats on the communion table; laughing and chattering and calling loudly to friends in other parts of the building. But John Wesley and his friends went reverently to communion every week, and had regular times for prayer and Bible reading and talk about religious matters. Their fellow-students nicknamed them the 'Methodists,' because of their love of method in everything. They little knew how famous that nickname would become.

"The next thing we heard was that our Jack had become Mr. John Wesley, the famous preacher. He had begun by preaching to prisoners in gaol, and he had even been to America and preached to the Red Indians. Now he was back in England and people were flocking to hear him. He sought out especially those who did not go near the churches, so as to tell them of God. To do this he often had to speak in the open air, standing on a cart or a bench as a pulpit. We were very glad to hear one day that he was coming to Epworth. But the parson who had taken his father's church was not so glad. He, as well as many other clergy, thought that Wesley was wrong to preach in the open air and do his work in such an unusual way. Perhaps, too, they had guilty consciences when they saw him doing the work they should have done. Anyway, when he came the parson shut

the church door against him. But John Wesley cared nothing for that. He preached in the churchyard, standing on his father's tombstone, and we all went to hear him.

"I shall never forget that sermon. I saw gazing up at the preacher the faces of those who had not darkened a church door for many a long year. No wonder the poor loved to hear him. He made even the poorest labourer feel, as was said, that he was 'a creature dear to God,' and that it mattered to God how he lived. They say that when Wesley preached to twenty thousand Cornish miners, the tears running down their cheeks left white furrows on their mine-blackened faces. He urged men to live good lives, and he wanted them, too, to be clean and decently dressed and take care of their health. Of course, people were not always pleased with what he said. He spoke too straight for that. Sometimes, men whom he had shown to be selfish and wicked would pelt him and his followers with mud and stones, tear their clothes, or drag them along by the hair and throw them into ponds. Men were rough and brutal in those days. So it was not to be wondered at that Wesley and his friends suffered. You cannot change the heart of a country without being hated by some.

"For that is what Wesley did. He changed the heart of England and the whole world felt the change. He said once, 'The world is my parish,' and indeed he travelled over a good part of it. I have heard it said that all his journeys put together would have taken him ten times round the earth. Added to that there were all the books that he wrote, which brought him in many thousands of pounds—though he gave nearly all of it away, they tell me—I often wonder how he managed to fit all his work in. It was his methodical way of living which helped him. He rose at four every morning and was on his way by five. I can see him now coming riding along on his horse, the reins lying loose on its neck while he reads a book. He never wasted time. Once he

came to a ferry, but there was no ferryman, and Wesley had to wait. But instead of stamping impatiently about, as you or I might have done, he sat down, took out a book he was reading and quietly went on with it.

"Of all the men I have ever known or heard of, John Wesley gave most to the service of God and man. He never thought of himself. No day was too hot or too cold for him to go out. Once, when he fell from his horse and was badly bruised, he insisted on preaching just the same. Another time he sprained his ankle and could not stand, but rather than disappoint those who wanted to hear him he spoke on his knees. He gave up all his money, except what he actually needed to keep himself alive, to find work for the poor and provide them with food, clothes and medicines. I heard that on his deathbed his last words were, 'The best of all is, God is with us.' And that was the secret of his life."

III

The end of the story.—Wesley preached his last sermon at Leatherhead on February 23, 1791; wrote next day his last letter to William Wilberforce, urging him to carry on his crusade against the slave trade, and died in his house at City Road, on March 2, 1791, in his eighty-eighth year. He was buried in the graveyard behind City Road chapel.

John Wesley has been called the greatest missionary and the greatest religious organiser of all history. The ideals of the society of Methodists were lofty. Those who wished to enter the society must have "a desire to flee from the wrath to come, to be saved from their sins." When admitted they were to give evidence of their desire for salvation "by doing no harm; by doing good of every possible sort; by attending upon all means of grace." The teaching of the Methodists has had far-reaching and enduring effects. Although Wesley to his dying day professed himself a member of the Church of England, the Methodists could not be

accepted as part of the Established Church and they formed the greatest of the non-conforming bodies. In Wales, a form of Methodism became the national religion; in the United States Methodism spread rapidly; to-day the followers of John Wesley number some thirty millions. The enthusiasm of the Methodists aroused the clergy of the Church of England to carry on their

teaching with vigour. They, too, were stirred with zeal, and worked to carry their teaching to all classes of men and women.

A noble result of the religious revival was the steady attempt, which from that time has never ceased, to remedy the guilt, the ignorance, and the physical suffering of the unfortunate or the poor, and to promote their social welfare.

TEACHING NOTES

1. Prime Minister.—George I. did not attend the Cabinet meetings, that is, the committee meetings of the chief ministers of State. This opened the way for the present plan of government by the Cabinet with a Prime Minister at the head. The two chief parties in the country were the Whigs and the Tories. The leaders of the Whigs were mostly rich landowners and the bulk of the party consisted of the trading classes and the Dissenters. The Whigs desired to limit the power of the king and compel him to rule through Parliament.

The Tories mainly consisted of the country squires and the clergy. They were champions of a strong king and the Established Church.

2. Wesley and the Church of England.—Wesley was an ordained minister of the Established Church and was most unwilling to do anything to separate himself and his followers from that Church. His open-air sermons, however, made no appeal to the bishops and clergy of the areas in which he worked. Nor did his habit of extempore prayer and the violent ravings of some of his converts. To the average bishop, Wesley seemed a dangerous "enthusiast" whose heart was in his work and who caused far too much commotion in an age when "enthusiasm" was everywhere frowned upon. Yet, in despite of this opposition, Wesley

clung to his Church. It was not until near the end of his life that he himself began to ordain ministers for Methodist work, especially overseas.

3. Doctrinal changes.—No attempt should be made to interest young children in sectarian differences: Wesley is interesting enough without that. But at this stage it is as well to show them that men have gradually divided into different religious sects. They will know of Henry VIII.'s breach with Rome; they will have heard of Puritanism and the Pilgrim Fathers. The position can be put to them thus:

(a) Once everybody belonged to the Roman Catholic Church.

(b) Then a great many men and women left that Church and with Luther became Protestant. In England, Henry VIII. made his own Church—the Anglo-Catholic Church. Elizabeth went further and made the Church of England, which was half Catholic, half Protestant.

(c) Extreme Protestants in England (Puritans) began to set up their own Churches. There were in time, many kinds of these—Presbyterians, Baptists, Congregationalists.

(d) In spite of himself, Mr. Wesley founded yet another Protestant Church—The Wesleyan Methodists.

PICTURE SUMMARY

1. A fire nearly cost the life of John Wesley.
2. He worked every day to a time-table.
3. He was among a few students at Oxford who were earnest about religion.
4. He found that the poorer classes did not attend church.
5. He went among the people and preached in the open air.
6. He was not afraid to tell men the truth about themselves.
7. He travelled all over England on horseback.
8. He gave up most of his money to help the poor.
9. After his death Methodist chapels were built in many towns.



XV. NAPOLEON—NELSON—WELLINGTON



CHILDREN'S STORY

The hand on the Century Clock points to the year 1815, the year when the British under the com-

mand of the Duke of Wellington with the help of their Allies defeated the French under their great leader Napoleon Bonaparte at the battle of Waterloo. It was the last of a number of terrific battles in most of which Napoleon had been successful. For twenty years he had brought terror and destruction to the peoples of Europe. Now at last, humbled and defeated, he was compelled to surrender and to end the remaining years of his life on the lonely island of St. Helena in the far Atlantic ocean.

Let us first read a few of the early stories of Napoleon and Wellington, and of another, Nelson, who came to be the greatest sailor in the world.

THE BOY NAPOLEON

The winter of 1783 was bitterly cold and snow fell heavily. In the courtyard of the military training school at Brienne, in France, the pupils decided to stage a snow fight. But they had little idea of how to set about it. Here and there small parties made heaps of snow and flung snowballs aimlessly at the others. A small scraggy boy, with a dark skin and long dank hair, stood a little apart from the rest. Young Napoleon Bonaparte was not popular in the school. He was too much wrapped up in himself, too sulky. Besides, in the eyes of his companions he wasn't really French—

he came from the island of Corsica, off the coast of Italy, and you couldn't call that France for Corsica had been taken over by the French only a few years before. So Napoleon was left very much to himself. Now, as he watched, his lips curled in contempt. They were such dolts, these French boys. They had no idea of order, of system, of a *planned* game. Suddenly, their clumsiness proving too much for him, he came forward, and in clear curt tones began to tell them what to do. They must build the snow into solid fortress walls—see, it was hard enough. Like this; and then so! Surprised, his companions obeyed his orders without question, and soon a mimic warfare was in progress, with attack and counter-attack, storming parties, and orders, correct to the last detail.

Napoleon Bonaparte was a born soldier. Nevertheless, an examiner reported on him later: "He will be an excellent *sailor*." How little the examiner appreciated what the future held in store for one of the greatest generals the world has ever known, at whose name the whole of Europe trembled!

THE BOY WELLINGTON

At Eton young Arthur Wellesley was to leave school at the end of term, 1784. He did not in the least want to leave. The Eton boys were good fellows, and the school life, if rough, had plenty of excitement. Besides, he was only fifteen, and he had no wish to begin making a career at that age, when other boys still had a year or more of school life ahead of them. But his parents said it was of no use his staying any longer. He was slow to learn and made little progress with his Latin and Greek. Compared with his brilliant elder brother, Arthur was hopeless. He must leave Eton and find some useful occupation. But what? After much thought, the Wellesleys decided to put

their son into the army. He should go for training to a military school in France and then receive a commission and become an officer.

So Wellesley left Eton. Soldiering did not really appeal to him but there were other things. He was fond of dancing and he had begun to make some progress on the violin. He need not take his soldiering too seriously, for few young officers did. Thus this boy set out to find fame as the Duke of Wellington in a profession in which he never hoped to make good.

THE BOY NELSON

The great stage coach lumbered heavily into London, and at last, with much groaning and creaking, halted at its terminus, 1770. Among the passengers who alighted were a clergyman and his small son of twelve. Both looked somewhat sad and forlorn and with good reason, for the rector of Burnham Thorpe, in Norfolk, was sending his son, Horatio, to sea, and neither of them liked the idea. The boy was young and delicate, and hardly seemed suited to the rough life of a sailor. The Nelsons, however, always stuck to their guns. Bravely the father packed his son into the coach bound for Chatham dockyards, and with a sigh watched it vanish into the distance.

Arrived at the dock, Horatio sat miserably on his box, gazing at a forest of tall masts wondering which of them belonged to his uncle's ship, the *Raisonnable*, and wondering too why his uncle, Captain Suckling, had not come to meet him as he had promised. At last an officer, struck by his forlorn look, asked him what he was doing. Horatio told him, and very soon, after a meal at the officer's expense, the boy was aboard the *Raisonnable*, and setting out on his first voyage.

He hated it. What is more, he hated his second voyage, and his third too, although on this trip he proved his pluck by attacking a bear with a musket. The brute was reaching out to claw him when a shipmate shot it dead and saved his life. But it was

only pluck that made him stick to the sea life. To the end of his days he was seasick at the beginning of every voyage. It seemed as if young Nelson would never make a sailor, and yet, as Admiral Nelson, he won a fame that will never die.

What happened to these three "misfits," and how did they come to meet each other?

1805.—Nearly twenty-one years later these three "misfits" had won the greatest renown, in the three professions in which they never hoped to make good. Horatio Nelson was now Lord Nelson and acknowledged to be the greatest sailor since Drake, while Wellesley had just been knighted for fine service in India. As for the pale Napoleon he was now Emperor of the French. Everywhere his armies marched to victory. Kings trembled at his name. To crown him Emperor the Pope had made a special journey to Paris. No country, it seemed, could stop his wonderful progress.

But Britain had not yet bowed to Napoleon. Try as he might, the Emperor could not make headway against British sea-power. So long as British ships ruled the Channel, so long would it be impossible to land armies in England. It was in the year 1805 that Nelson won the great victory of Trafalgar.

II

Conversation piece.—Let us imagine that we are listening to a conversation between a sailor of Nelson's fleet and a soldier of Wellington's army in the year 1821. The sailor wears a short jacket, long loose trousers, and a round hard hat, and his hair, plaited into a pigtail, hangs down his back. The soldier wears white breeches and a red coat, gaiters and a three-cornered hat.

Soldier. Have you heard the news? Napoleon has died in exile at St. Helena.

Sailor. So old Boney is dead! Now we shall all be able to sleep in peace, and mothers will have to stop frightening their children into being good by telling them "Boney is coming!" It is strange, isn't it, to think that one man, and such a little

man, too, could make the whole of Europe afraid.

Soldier. The little man had a big brain. He might have done great things for the world if he had not been so greedy for power for himself and his family. Just think of it! He became Emperor of the French; he made his three brothers kings, his sister a queen, and his little son is king of Rome. Such a man would never have stopped till he was dictator of the world.

Sailor. But for Britain, he might well have done it. So long as she was mistress of the seas, however many victories he might win on land, Britain was safe. Again and again he tried to conquer England—"to drive the English leopards into the sea," as he said—but always there was the British fleet to be reckoned with, and so long as Nelson was in command we couldn't be beaten.

Soldier. We have to thank Nelson that Napoleon didn't bring an army to invade England. It was all ready and waiting, so I have heard.

Sailor. Yes, waiting for the chance to cross the Channel. "Let us be masters of the Channel for six hours," Boney said, "and we are masters of the world." But they couldn't manage that. We had them cooped up in their ports, and they daren't come out.

Soldier. But they got away in the end.

Sailor. Yes, they got away in a fog, and off they went to the West Indies, meaning to throw Nelson off the scent and then double back, while he was still looking for them far away, make themselves masters of the Channel, and so get the invading army across to England. That was Boney's plan, and a clever plan too. But it failed. Nelson found out where they had gone, and sent a fast frigate home to give the warning that they were making for England. Our fleet in the Channel headed them off and they made for Cadiz where we kept them cooped up in a Spanish harbour this time, till they managed to slip out again. At last we met them off Cape Trafalgar, and then it was a fight to the finish.

Soldier. The battle of Trafalgar! All England went mad with joy when the news came of that famous victory. How the bells pealed. But it wasn't all rejoicing, I remember. In our church they rang a passing bell, too, to show our sorrow that Nelson had died.

Sailor. Yes, that was the cost of the victory. I was serving on his flagship, the *Victory*, and I saw it all happen. There he stood, small and slight, wearing his admiral's coat with the four stars,—no one could get him to wear any other in battle, though it made him a target for any rifleman. His empty sleeve was tucked into the front of his coat as he always wore it. He was talking to his friend; Captain Hardy, when a shot carried away a buckle off Hardy's shoe. "This is too warm work, Hardy, to last long," said Nelson. And then came the fatal shot, from a marksman in the crow's nest of a French ship. Nelson fell, mortally wounded. They began to carry him below. He took out his handkerchief to cover his stars and his face so that his men should not see who had fallen. That was just like him—always thinking of his men before himself. No wonder we loved him!

Soldier. I have heard that his last words were, "Thank God I have done my duty."

Sailor. He was thinking of the signal he had flown before the battle, "England expects that every man will do his duty." He certainly did his, for after Trafalgar, Napoleon gave up all thought of invading England or of conquering her in naval battle.

Soldier. Yes, but Boney had another trick up his sleeve. He tried to starve us out. He issued the *Berlin Decrees*, stating that no ship coming from Great Britain or her colonies might be received in any port of France or any country friendly to France. If we could not sell our goods we could not buy, and in that way Boney hoped that he would crush the power of England. But that plan failed too.

Sailor. It was bound to fail, for he could not prevent our ships from sailing to foreign

ports. The Berlin Decrees offended many of the nations of Europe, who needed British goods, and so he lost friends. And finally the Russians refused any longer to obey the Decrees. Napoleon took an army against them, but though he reached Moscow, their capital, he found the city burnt, and was obliged to bring his army back to France through the terrible Russian winter of 1812. So many died of cold and hunger and the attacks of the Russians that out of an army of 600,000 men, less than 60,000 returned.

Soldier. That was the beginning of the end of him. In 1814 he was forced to abdicate, and we thought we'd seen the last of him when he was sent away to rule a little island called Elba. But he escaped from there, raised another army, and started his old tricks again.

Sailor. And then your Duke of Wellington came to the rescue.

Soldier. Yes—the *Iron Duke*, as we called him. He had been fighting Napoleon for a long while, but we always knew that sooner or later it would come to a pitched battle

between the British and the French. And that battle came in 1815 at Waterloo.

Sailor. Waterloo—that's a name as famous as Trafalgar. You were there, weren't you?

Soldier. Yes, and might have been there still, like many another brave fellow who died that day. We fought from eleven in the morning until eight at night, and by the end of the day, with the help of the Prussians, the French army was totally beaten.

Sailor. And so Boney's power was broken. One can't help feeling sorry for him, sent to eat out his heart on that lonely little island in mid-Atlantic, after all the glory he had known.

Soldier. He was a great man, and might have been a greater, but for his love of power. He gave his country law and order, and men say that the laws he gave her are some of the best in the world. What a pity that such a man should have wasted his life in self-seeking!

Sailor. And wasted the lives of Nelson and of thousands of more brave men.

TEACHING NOTES

1. Synopsis (1789-1815).—These years hold the story of the French Revolution and of Napoleon I. The French gained little from their exploits in America; in fact the expense of the campaign brought the country several stages nearer to bankruptcy. In desperate need of money (1789) King Louis XVI. called together the representatives of the French people. At once he was overwhelmed with demands for reform of every kind. Within five years (1789-94) the Revolution ran its course. Violence became general, and, between 1792 and the summer of 1794 there was a great number of executions on the guillotine. King, queen and countless nobles perished. Moreover, by 1794, France was at war with all the leading nations of

Europe. At first hopeless in the field, her troops later won amazing victories, for they shewed fine fighting spirit and in time produced great commanders.

Among these was Napoleon Bonaparte, who, after an uncertain start between 1793 and 1796, was at length made commander of the armies in North Italy. Here he scored victory after victory over the Austrians. Famous now, he led an army to Egypt, whence he hoped to strike a blow at the English in India. Nelson foiled him by shattering his fleet in Aboukir Bay, 1798. Penned in Egypt for a while, Napoleon at length got back to France, where, after much plotting and planning, he was made First Consul, then Emperor, of the

French. On land no nation could withstand his armies: the long tale of victories grew longer yet. On sea it was different. The British ruled the seas—a fact which had an important result: Britain could not be invaded. Nelson at Trafalgar completely shattered that scheme. But still the French were victorious on land; Austrians, Russians and Prussians went down before them in turn at Austerlitz, Jena and Friedland.

At length, Napoleon took a fatal step. He dethroned the king of Spain, and drove the king of Portugal overseas to Brazil. In revolt the Portuguese and Spaniards summoned the British to help. Wellington arrived and, by steady persevering tactics, drove out the French in operations covering six years.

Napoleon made another mistake in 1812: he invaded Russia with more than half a million men. After a terrible battle at Borodino, the Russians avoided pitched battles and when Napoleon was well inside the country, the terrible winter did the rest. He returned with but a fragment of his great army. Bolder now, other nations attacked Napoleon. He was beaten at Leipzig, and then the enemy invaded France. The Emperor fought on to the end, but the Allies were too much for him. He abdicated in 1814 and was given a tiny kingdom on the island of Elba. From there he escaped to trouble Europe again for a period known as *The Hundred Days*. Waterloo brought him to his final account, June 18, 1815.

2. Nelson and Wellington (other details of their lives).

Nelson.—The son of a Norfolk rector and one of a family of eleven, Horatio Nelson went to sea with his uncle, Captain Suckling, at the age of twelve. For some time he made little headway: his health was poor and promotion slow. Nelson, at eighteen, was still a midshipman! Then his luck changed. A post-captain in 1780, he had the command of the *Agamemnon* in 1793. Until his death in 1805 he fought ceaselessly against the French; at St. Vincent (1797) he commanded the thirteenth ship in a line

which was sailing through two lines of Spaniards bound in the opposite direction. His admiral, John Jervis, intended to sail away, contenting himself with giving the foe both broadsides as he passed. Nelson, however, wheeled his ship and engaged the Spaniards. Jervis had to join battle after that manoeuvre. One year later, a rear-admiral now, Nelson smashed the French fleet in Aboukir Bay. There a line of thirteen French ships rode at anchor. Between them and the shore lay rather shallow water. To their surprise, part of Nelson's fleet passed *between them and the shore*; the other part came up on the sea side. So the French were caught in a sort of "pincers" movement. One result of their defeat was that Bonaparte had to stay in Egypt for much longer than he desired.

Wellington.—Arthur Wellesley, born in 1769, left Eton early because of his slow progress. After some time at a military school in France, he took a commission in the British Army. He gained his first real distinctions in India: his army of 10,000 men overcame a force of Mahrattas nearly four times as large in 1803. (The Battle of Assaye.) For his services Arthur Wellesley became *Sir* Arthur Wellesley. For services rendered later he became the Duke of Wellington. In 1808 Napoleon invaded Spain, whose people very soon besought the English for aid. Making his base in Portugal, Wellington fought the French for six years. Famous battles belong to this period: Corunna, Talavera, Salamanca, Vittoria, besides the storming of Badajoz and Ciudad Rodrigo and the fortifications of Torres Vedras. "The Spanish ulcer destroyed me," said Napoleon later.

When Napoleon had been defeated in 1815, Wellington took up politics seriously. Before he died in 1852 he had held many important posts including those of Prime Minister and Foreign Secretary.

3. Preliminaries to Waterloo.—Waterloo, fought on Sunday, June 18, 1815, was

PICTURE SUMMARY

1. Napoleon was a lonely youth.
2. Wellesley was an awkward Etonian.
3. Nelson, when a boy, hated the sea.
4. Napoleon waited at Boulogne for his fleet to clear the Channel.
5. Nelson on the *Victory* destroyed his fleet at Trafalgar.
6. Nelson's famous signal.
7. Napoleon was imprisoned at Elba.
8. His Old Guard gathered round him at Waterloo.
9. Wellington beat him at Waterloo, 1815.



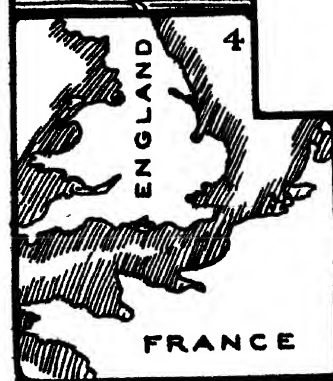
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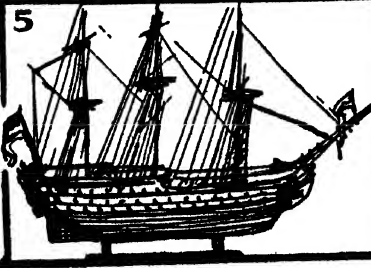
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6

really the final stage of a campaign begun a few days earlier. In March 1815, escaping from Elba, Napoleon soon regained the throne of France. Instantly the other Powers declared him an outlaw and gave to Wellington the command of the allied forces. When Napoleon entered Belgium in June he found opposed to him (1) Prussians under Blücher at Charleroi; (2) Wellington's forces at Quatre Bras, a cross-roads about fifteen miles south of Brussels. The Prussians were driven back from Charleroi

by one army, while another unsuccessfully drove at the British on Quatre Bras. Later, the Prussians had to retreat still farther before the French, leaving Wellington to fall back for safety on Waterloo. Napoleon therefore had succeeded in driving a wedge between the British and the Prussians. Much depended upon whether the Prussians would be able to rejoin the British at Waterloo. To put it in another way: Could Wellington hold out until Blücher arrived? He just managed to do so.

XVI. THE GREAT REFORM ACT



CHILDREN'S STORY

The hand on the Century Clock points to the year 1832, the year when Parliament

passed the *Reform Act* by which the right to vote for members of Parliament was greatly extended among the people of Britain.

The dreaded war was now over. Napoleon had been dead for eleven years. The rejoicings after Waterloo had died down. Wellington had been thanked and praised in Parliament. Now the people looked forward hopefully to happier times when there would be plenty of work, increased wages and cheap food. Matters, however, turned out quite the reverse. The seven years that followed the peace (1815-1822) were marked by deep distress in all parts of the country. War taxes were heavy; many factories which had made munitions, boots and clothing for the armies were closed; trade with Europe became less and less, for the war-stricken countries were unable to buy; the disbanded soldiers and sailors added to the constantly increasing numbers of unemployed.

To make matters worse, Parliament, which consisted mostly of landowners, passed a *Corn Law* (1815) to prevent cheap grain from being brought into England from foreign lands, for the landowners were anxious to keep lands in cultivation that at great cost they had tilled during the war. This Corn Law kept the price of bread high at the very time when most people had little or no money to spend. In many parts of the country there were riots and disturbances which, however, were severely repressed.

King George III., who had been insane and almost blind for many years, died at Windsor Castle in 1820, after a long and eventful reign of sixty years. His eldest son, who had been Regent since 1811, came to the throne as George IV. The new king had little to do with the real government of the country, for the Cabinet system was now firmly established. He died in 1830 and was succeeded by his brother who had passed most of his life in the navy and was Lord High Admiral at the time of his accession as William IV.

Many people in Britain believed that the only way in which their troubles could be cured was to reform Parliament by giving a much larger number of people a share in electing the members.

The system of electing members of Parliament was bad and unfair, but there

were other things which were worse. Few, for example, really knew who might vote and who might not. In some places a man might vote if he had a plot of land. In others, the Mayor and Corporation chose the members. Elsewhere, again, every man in the town voted who owned a hearth on which he could boil a pot. In these towns, some time before the election, it was the custom for the householders to bring out their pots and boil them on fires made in the streets, to prove to everyone that they had a right to vote. At the same time many strangers would come to settle in the town so as to be able to vote, and as soon as the election was over, and they had sold their votes to the candidate who would pay most, away they would go again. These men were called "potwallopers."

The worst of the evils was that there were many places with few or no inhabitants at all, and yet they were represented in Parliament. These places had once been important, but as years passed people had left them and settled elsewhere. For example, Old Sarum was a green mound where no one lived, for its inhabitants had moved to Salisbury five hundred years earlier; Corfe was a ruined castle; Dunwich had been swallowed up by the sea. Yet, in 1830, these places and many like them had members of Parliament! What made the situation still more unfair was that large new factory towns like Leeds and Birmingham had no members of Parliament of their own, they had only the county members to represent them, so they had little means of getting the laws passed which they needed. Clearly this state of things could not go on. Parliament must be changed, or *reformed*.

But this reform was not easy to bring about. The members of Parliament representing these "rotten boroughs" naturally did not want to lose their seats. Also, some rich men owned constituencies—"pocket boroughs," as they were called, because they had them "in their pockets"—and they were afraid that if Parliament were reformed they would not be able to make

money by selling these constituencies, as they had been accustomed to do.

By the year 1830 something had to be done, for there was great unrest in the country. Petitions poured into the new Parliament which was led by Lord Grey. The Duke of Wellington, who had done so much for the nation at war, thought that there was no need for reform, and this made him so unpopular that rioting mobs smashed the windows of his Piccadilly house. In the country districts rioters showed their hatred of the landowners by firing haystacks. The country was in a turmoil and the Government was compelled to make a change in the law. The first Reform Bill had a majority in the Commons of *one vote*! A General Election followed and a second Bill passed the Commons with one hundred votes to spare. Then the Lords threw out the Bill. Rioting began anew; a prison was invaded; a castle, a palace and a mansion were set on fire. Lord Grey tried again with another Bill but as the Lords were obstinate he resigned. Soon, he had to be called back to be Prime Minister and in the end he was successful.

II

Conversation piece.—Let us imagine that it is the year 1832, and that we are listening to a conversation between two gentlemen in the streets of London. One of them is a city merchant, and the other is a friend, a wool merchant from Leeds whom he has just met.

1st Gentleman. Have you heard the latest news?

2nd Gentleman. I have only just arrived. What has happened?

1st Gentleman. The Lords have thrown out the second Reform Bill!

2nd Gentleman. That is bad news. I really thought that the Lords would have been more sensible seeing what trouble there is in the country about the Bill.

1st Gentleman. Trouble! You may well say that. There was almost a riot round the Houses of Parliament last night. Fortunately the new Peelers were able to control the people.

2nd Gentleman. Peelers! Who are the Peelers?

1st Gentleman. Haven't you seen the new police? I forgot, you live in Leeds and I suppose you haven't got the new police force yet. We know them as Peelers because Sir Robert Peel was the man who got the Bill for establishing the force through Parliament. That was three years ago and already they have done good work amongst thieves and rogues in London. Look, there stands a Peeler. A smart looking fellow don't you think?

2nd Gentleman. He certainly is. What a change from the old Watchmen I used to know. But, tell me, what is going to be done now about the Reform Bill? We in Leeds are determined to have a member of our own in Parliament.

1st Gentleman. So, too, are many other towns determined. But I don't think we shall have to wait much longer now. There have been serious riots in Bristol since it became known that the Bill had passed the Commons and then been thrown out by the Lords. Everywhere you see crowds with banners having on them, "The Bill, the whole Bill, and nothing but the Bill."

2nd Gentleman. It is all very well to demonstrate, but what can be done? Can't the king do something?

1st Gentleman. The king is not likely to interfere in politics. Yet I hear that the

Cabinet has a plan. It is bringing in a third Bill and two ministers have gone to see the king. They mean to persuade him to create a number of new Peers who are in favour of the Bill. Then when it comes to voting the Bill will be passed.

2nd Gentleman. That's a good idea. Now we can be sure of our Bill. I must make my stay a little longer in London for I should like to be here when it is passed.

1st Gentleman. Do stay. I shall be happy to meet you at any time. But take my advice, don't be in the streets when the Bill goes through. There will be such a riot of rejoicing as we have not seen since Waterloo. Every merchant and trader that I know has his flags and bunting ready to put out.

2nd Gentleman. Never fear. I can take care of myself.

The end of the story.—It was not necessary after all for King William IV. to create new Peers. When the House of Lords heard of this plan, they decided that, rather than force the king to do such a thing, those of them who objected to the Bill would stay away until the voting was over. This they did, and on June 4, 1832, the Bill became law amid great rejoicings.

By the Reform Act members of Parliament were more equally divided among the towns and counties; many "rotten boroughs" and "pocket boroughs" were done away with.

TEACHING NOTES

The Reform Act.—At first sight the Reform Act seems unattractive matter for young people. Actually it can be made very interesting. Here are some suggestions for making the subject real and interesting.

A. Show election methods by allowing the children to have their own election. This requires: (1) Two candidates. (2) Voting papers with their names. (3) Actual

voting by means of marked crosses. (4) Two boys to count the votes. (5) Declaration of the poll by another boy.

B. Repeat the election in the old style. Study "The Eatanswill Election" as told in *The Pickwick Papers*. Then tell the story to the class, and afterwards let the class act the incident.

Characters: The Mayor. The Hon. Samuel Slumkey. Horatio Fizkin, Esq. Various

PICTURE SUMMARY

1. Westminster — Houses of Parliament.
2. The ballot box—how voting is done.
3. The "Hustings" of olden days.
4. A mound with a tree was a former constituency.
5. A ruined castle was another kind of constituency.
6. People rioted and burnt haystacks for the Bill.
7. They smashed Wellington's windows.
8. Earl Grey, the man behind the Bill.
9. The Cabinet threatened to ask the King to create a number of Peers.

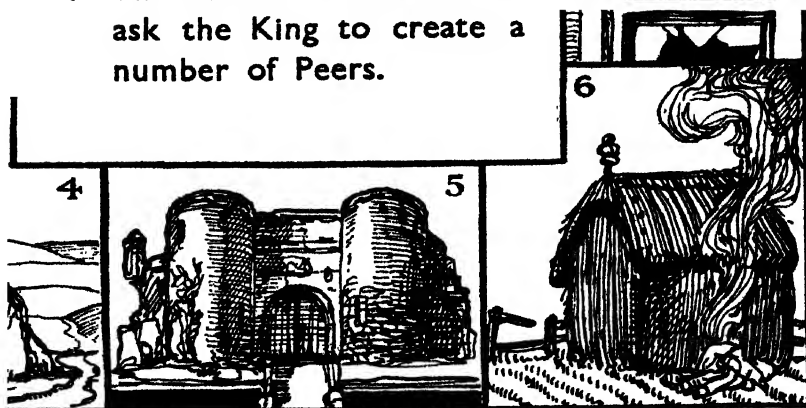


PLATE XVI

members of the crowd. Various supporters of the candidates.

Finish the election by voting "by show of hands."

C. Explain how a "Bill" becomes an "Act."

(1) When proposals are first introduced into Parliament they are in the form of a Bill. When finally approved, the Bill becomes an Act or Statute.

(2) A Bill is debated in three stages in the Commons and three in the Lords. Voting takes place at each stage. Usually the members pass into lobbies; i.e., into one of two rooms marked "Ayes" and "Noes" respectively. This method of voting makes counting easier.

(3) Once a Bill has passed the Commons, it undergoes a similar progress through the Lords. In 1832 a Bill had to pass both Houses; now, since 1911, there are some exceptions.

(4) Safely through both Houses, the Bill goes to the monarch for his consent. The monarch does not actually sign a public Bill, but says in Norman French *le roy le veult*—"the king agrees."

D. Outline the fortunes of the Reform Bill stressing (1) the need for it, (2) the difficulties in the way. Use imaginary figures to show "The Peers Question"—thus:

Commons

100 for Bill
40 against Bill

Lords

70 for Bill
100 against Bill

How many Peers must King William make to get the Bill through the Lords? This is a simple question for the class to answer.

E. Explain what was brought about by the Act of 1832.

(1) Many unworthy "constituencies" lost their right to send any members at all.

(2) Some smallish places retained the right to send one member instead of two.

(3) Some important places, now represented for the first time, acquired the right to send *two* members.

(4) Some important small places acquired *one* member.

(5) The right to vote now depended upon whether or not one was a householder paying an annual rent of £10 a year.

(County constituencies and county franchise constitute a complicated matter which it is not necessary to deal with. Care should be taken to let the children know that at this stage they are hearing of the most important matters only.)

(6) This Act did not introduce *secret* voting. That did not take place until 1872 when Gladstone was instrumental in passing the Ballot Act.

XVII. GREAT REFORMS

CHILDREN'S STORY

The Parliament which followed the passing of the *Reform Act* in 1832 made many new laws to improve the condition of the people. When we read about the various Acts of Parliament that were passed we sometimes find it difficult to realise what they all mean. This imaginary story may help us to understand these matters.

THE STORY

William Grant was a good lad at school but like many other boys he could never remember his history. Now he was in trouble again. For the third time in one week he had failed to pass the history test. He was being kept in for a whole half-holiday, and wearily he read a page of dates and names. It was a beautiful day and through the window floated pleasant and happy sounds—the click of bat and ball and the shouts of

those who had passed their test with little trouble.

"Oh dear!" sighed William. "What's the use of all these dates: 'Abolition of Slavery, 1833,' 'Ashley's Factory Act, 1833.' Who on earth was Ashley? And—what's more important—why can't I remember his stupid date?" William sighed again—he yawned—he slept—he dreamed.

"Perhaps," said a voice behind him, "it's because you *will* think of Ashley as a date and not as a human being—a man like your father or your uncle for instance."

Startled, William looked round, to see a thin gentleman in court dress. A jewelled star blazed on his left breast and his bearing was both dignified and kind.

"Who are you?" whispered Billy, a little awed.

"I am, or I was," said the stranger, "the Lord Shaftesbury who is giving you so much trouble. I heard you groaning and thought I might help you."

"I wish you could," sighed Billy. "What makes the 19th century so dull in the books? Was it dull to live in?"

"On the contrary it was extremely exciting. I, for instance, was fighting all the time . . ."

"But I didn't know you were a soldier."

"I wasn't. My battles were fought in factories and mines and even in chimneys. Other and cleverer people fought their battles in customs-houses and schools."

Billy was bewildered. "I'm afraid I don't understand. I thought battles were for soldiers."

"Still more important battles have to be fought against evil," said the visitor. "Come here and I will show you."

He drew Billy to the window. To his surprise the boy found himself looking out on to an American cotton field where, in the blazing sunlight, hundreds of Negroes worked.

"Over a hundred years ago," said Shaftesbury, "we allowed people in the British Empire to own *slaves*. A slave who, mind you, is a human being, could be bought and sold like any other kind of property, like

tables and chairs for instance. And sometimes they were very brutally treated. Like. . . ."

Outside a fearful howling began. Looking through the window Billy saw that one of the Negroes was on his knees while over him stood a thick-set man with a large whip.

"Like that," resumed Shaftesbury. "Slavery was a mighty evil, which vanished from the British Empire in 1833,—at least, there were no *black* slaves after that date."

"But surely there were no *white* slaves?"

Somehow the pair were now walking down a narrow street of mean grimy houses in England.

"Nobody called them slaves, it is true," said Shaftesbury. "Nevertheless, many workers in Britain in 1830 were treated no better than slaves were treated. How old do you think that child to be, for example?"

He pointed to a small ill-clad urchin, who cringed past them as though he expected a beating.

"About six," guessed Billy.

"He is six. His name is Tom."

"How dirty his face is!"

"He sweeps chimneys; that is why. Let us follow him."

Tom slunk along the street until he met his master, the sweep. First, he was cuffed for being late and then he was taken to a large private house where a chimney had to be swept. There Tom was ordered by his master to *climb up* the chimney.

"But isn't it dangerous?" gasped Billy.

"Dangerous and cruel. If the small sweeps won't go up the flues, fires are lighted under their feet. Sometimes they choke in the soot. Always their knees and elbows are scraped and bleeding. I laboured for years to make people see how cruel all this was. But we could not get the thing made unlawful before 1864. Then, thank God, I stirred the country."

"But hadn't you also something to do with factories . . . and mines?"

"I had, indeed. Poor people and their hard lives were always in my mind ever since I was a boy at Harrow. I found that children were made to work in the mills for as many as

fourteen hours a day, with perhaps half an hour for food which they were too poor to afford and too tired to eat when they had it. They worked, these poor little ones, under threats and blows and always among dangerous unfenced machinery. Even worse was the lot of those women and children who had to work in mines. Babes of five sat twelve hours in total darkness opening gallery doors, while women were harnessed to small carts and had to go on all fours, so narrow were the passages."

"But you stopped it? You did stop it?"

"Only after a long hard fight. First we made masters stop employing very young children altogether and shorten the hours for those they could employ. Then we kept women out of the mines altogether."

"But did the owners obey the law?"

"Some of them were tricky and had to be watched. So then we had inspectors to go round the factories and mines to see that the law was obeyed. Now, to change the subject, come in here for a minute."

"Here" was a small hall. It was packed to the doors. On a platform at the far end a man spoke excitedly.

"Why is he so angry?" asked Billy.

"Because there are a number of laws in force which make the landlords rich and bread dear. Listen."

The speaker was shouting now:

'The will of the landlords, it is, arrayed against everlasting justice. Man toils for his bread by the sweat of his brow. It is just that he should receive that bread untaxed; but those who tax bread will tax anything.'

He paused, and, at that moment, a simple countryman came forward on to the platform and said these words: 'I be protected and I be starving.' Terrific applause followed.

"And did they ever get rid of those laws?" asked Billy as they left the hall.

"The Corn Laws vanished in 1846," replied Shaftesbury, "and after that time men seemed less afraid to attack evil. Many have been the changes between then and your own day. Tell me, my young friend, what you think of school and lessons."

"I couldn't . . . in a few words," said Billy with feeling. And, as they walked back into the schoolroom, he sighed.

"You would miss both school and lessons all the same, if they were not there to be had. Did you notice that hall where the man was speaking on the Corn Laws?"

"Yes. It was small and rather stuffy and had piles of desks against the wall. Was it a school hall?"

"During the daytime in 1844 it was a school of a sort. There were not many in those days for poor people, most of whom grew up unable to read or write. But in halls like that, a few children managed to pick up a little learning from teachers who did not know much more than their pupils."

"Dames' Schools?"

"Well, not always. There were some small schools in charge of old ladies; here and there one came across this kind. But there were others—rather better—run by churches and chapels and societies. Even so, many more were needed and, in 1870, something was done to provide schools for everybody. A wise man called Forster secured the passing of a law which started what were called "Board Schools." In a few years' time these schools gave education free and every child had to go to a school of some kind.

"Yes," Shaftesbury continued. "I lived for eighty-four years and during that time I saw slaves freed, children and women protected, trade improved and education put within the reach of all."

Billy was looking at his date-chart. "I see there were one or two important things after your day, though. You weren't alive when pensions were given to poor people in old age when they could no longer work. In 1908, that was."

"No," said Shaftesbury. "And no one dreamed of giving women votes in 1880, let alone of allowing them to sit in Parliament as members. Who was your first lady member? Lady . . . Lady . . ."

"Lady Astor. In 1919."

"So it was. Well, do you find it more interesting now? Do you think you know those dates now?"

"Do you know those dates now?"

Somehow the Earl of Shaftesbury had turned into Billy's teacher. He repeated his question.

"Oh yes, sir. I'm sure I do. Let me see:

Slaves freed and Factory Act, 1833.

Collieries Act, 1842.

Corn Laws Repealed, 1846" . . . etc., etc.

Somehow it was easier. It was *living* history.

TEACHING NOTES

1. Lord Shaftesbury (1801-1885).—The son of aristocratic and neglectful parents, Antony Ashley Cooper endured a childhood of grim misery in the charge of a pious nurse. Later, after profitable years at Harrow and Oxford, he came to his life's work of trying to improve the lot of three oppressed classes: poor working-children, poor working-women and lunatics. In 1830 wealthy factory-owners victimised children, and mine-owners victimised both women and children. Very young children, Shaftesbury discovered, worked in factories from five in the morning until eight at night; they grew up deformed in body and stunted in mind; at twenty many were old and worn out. In the mines, too, babes of five years sat in total darkness for twelve hours at a time, while women, harnessed to small trucks, crawled on all fours along underground galleries. These and other ghastly horrors were revealed before commissions specially set up to inquire into labour conditions, and at last, thanks to Shaftesbury and others, Parliament passed a *Factory Act*, 1833.

By this Act it became unlawful to employ in factories children under nine or to work children over that age for more than a specified number of hours. Other Acts, passed between 1844 and 1850, further improved conditions and made it harder for employers to evade the law. A *Collieries Act* of 1842 kept women out of the mines and children under thirteen. In the case of both factories and mines capable inspectors saw that the law was carried out.

Before this, Shaftesbury had attacked another evil—the employment of "climbing boys" by chimney-sweeps. These poor creatures had to climb up flues to brush out soot; often their masters lighted fires under their feet to accelerate climbing; always their knees were torn and raw; sometimes they died in the choking darkness. To end these scandals Shaftesbury laboured for thirty-five years; the *Climbing Boys' Act* of 1875 finally closed an ugly chapter of British social history. As to lunatics, the mentally afflicted were at the mercy of brutal keepers and unsupervised asylums. The *Shaftesbury Act* of 1845 started a movement which resulted in the better treatment of poor lunatics in county asylums and the closer supervision of private "homes."

2. Slavery.—Slavery vanished from the British Empire in 1833 after a long and dishonourable career which began in 1619 with the arrival in Virginia of a cargo of African Negroes.

The institution of Negro slavery was one of the results of Portuguese and Spanish discoveries in the 15th and 16th centuries. Pioneers in the New World soon found out that the African Negro stood the conditions of forced labour better than did the native Indians. A wholesale importation of Negroes followed. In this traffic British, French, Dutch and Spanish took their share. A black population grew to considerable proportions. Treatment of the Negro naturally varied, but there was enough general brutality to start

a movement for the abolition of first the slave trade and then of slavery itself. So far as Britain was concerned, the slave trade was abolished in 1807. Such men as Clarkson, Wilberforce and Zachary Macaulay followed up this victory with attacks on the system. Their efforts were successful in 1833.

3. The Corn Laws.—When Britain was at war with Napoleon, high prices could be had for home-grown wheat. Farmers prospered and much unsuitable land was brought under cultivation. With peace (1815) prices would have fallen sharply if Parliament, composed mostly of landlords, had not, by the Corn Law, set high duties on imported corn. Unhappily the poor suffered, for the price of bread was always high, and bread was a necessity in their daily life. To many business men the system of *Protective Tariff* seemed indefensible. A number of them, including Richard Cobden and John Bright, formed the *Anti-Corn Law League* in 1839. Everywhere meetings were held to denounce the Corn Laws. Crowds heard speeches innumerable; at many meetings simple labourers were produced to make the famous remark: "I be protected and I be starving." Thanks to the *Penny Post*, Anti-Corn Law pamphlets appeared on every breakfast-table. For a long time, however, the Government took little notice. At last a famine in Ireland forced Peel's hand; he had either to let the Irish starve or to remove the restrictions on foreign corn. Converted by events as well as by the arguments of the League, he repealed the Corn Laws in 1846.

[Note: the excerpt quoted in the text is taken from a speech delivered at Drury Lane Theatre on March 29, 1843.]

4. Education.—Not much was done to educate the very poor in the early days of

the 19th century. Churches and chapels maintained some schools, and there was, of course, the inevitable (and generally inefficient) "dame" in most villages. Not until 1833 did the Government take much interest in the matter, when a grant of public money was made to some of the existing schools. It was not very much and soon, as the industrial population began to grow, the need for education became more and more pressing. "We must educate our masters," said Robert Lowe when the franchise was enlarged by the Act of 1867. Mr. Gladstone's ministry undertook that task in 1870. After that date Board Schools appeared in every district which lacked proper provision for education.

Elementary education became compulsory in 1880 and free in 1891.

5. Old Age Pensions.—Should the State pay decent old people pensions when they are past active work? This question was much debated between 1880 and 1906; often measures were proposed to pay such pensions, but they never got very far. At last Sir Henry Campbell Bannerman made a promise to pay pensions to the aged poor if he were returned to power by the General Election of 1906. He kept his word. Since 1908 pensions have been paid to old people over 70. At first the amount was not to exceed 5s. per week; it has now been much increased.

6. Votes for Women.—By their splendid service during the First World War women convinced the world that it was unjust to deny them the vote or the right to enter the professions. Since 1918 women have enjoyed equal rights with men. They vote and they stand for Parliament. In 1919, Viscountess Astor became M.P. for the Sutton division of Plymouth.

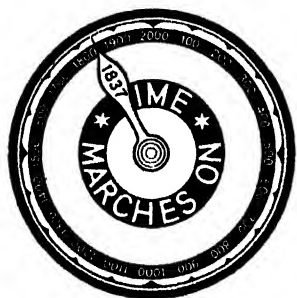


PICTURE SUMMARY

1. No more slavery in the British Empire after 1833.
2. The boy chimney-sweeps were cruelly treated.
3. Women worked in coal mines.
4. The Eros monument in Piccadilly was erected to the memory of Lord Shaftesbury.
5. "I be protected and I be starving."
6. A few children attended Dame Schools.
7. Most children went to Board Schools after 1870.
8. Old-age Pensions for the aged poor in 1908.
9. Lady Astor, the first woman M.P., 1919.



XVIII. VICTORIA, QUEEN AND EMPRESS

CHILDREN'S
STORY

The hand on the Century Clock points to the year 1837, the year when Queen Victoria, who came to be known as

"Victoria the Good," ascended the throne. The queen's reign, which lasted for sixty-four years, covers almost two-thirds of the 19th century. In such a long period of time so many great and wonderful things happened in the history of England that we must be content to catch a few fleeting pictures of the chief events.

1837.—It was the early summer morning of June 20. Along the road from Windsor to Kensington two gentlemen were travelling as fast as carriage-wheels could take them. The king, William IV., was dead and his successor, Princess Victoria, must be told at once. Between five and six o'clock the gentlemen arrived and thumped loudly on the palace doors. After much knocking a yawning footman let them in. There was more waiting; more ringing of bells. Then came a German governess. "I cannot wake the princess, she must not be disturbed."

"The *queen's* sleep must give way to affairs of State," was the reply.

A little more waiting and the princess, a young girl of eighteen, entered the room. Her hair lay about her shoulders and she wore a shawl over her dressing-gown. The gentlemen kissed her hand, knelt and told their news. Tears filled the new queen's eyes.

1837. Nov. 20.—The queen opened her first Parliament. The day was brilliant with

sunshine, the crowds from Buckingham Palace to the House were immense. The House of Lords was crammed with Peers and the gallery with Peeresses. Her Majesty having taken the oath to maintain the Protestant religion, which she did in a slow serious and audible manner, then proceeded to read the Royal Speech. The most perfect stillness reigned; not a breath was heard. Everyone listened with profound attention to the clear musical voice. Among the famous men present in the Lords were Aberdeen, the Duke of Wellington and Lord Melbourne, the queen's chief minister. In the Commons were Lord John Russell, Lord Stanley, Sir Robert Peel, Lord Palmerston, Benjamin Disraeli and William Ewart Gladstone, all of whom became in due course the queen's Prime Ministers.

1838.—The *Great Western* made her first steam voyage across the Atlantic, taking fourteen and a half days over the journey.

1840.—The streets of London were thronged with joyous people. It was the young queen's wedding-day. She was dressed entirely in articles of British manufacture. Her dress was of Spitalfield's silk; her veil of Honiton lace; her ribbons came from Coventry; even her gloves were made in London of English kid—a novel thing in those days when France held the glove-making business. The marriage took place in the Chapel Royal, St. James. The bridegroom was her cousin, Prince Albert of Saxe-Coburg, a tall, handsome man with an intelligent look in his clear blue eyes. He was well-known as a sober and serious-minded gentleman and there were great hopes that the queen's marriage would be a happy one both for themselves and the nation.

1840.—The queen's subjects were introduced to a novelty—a black stamp on which

was the queen's profile in white. Penny Postage had begun. Now that railways were being laid and mails carried by train, the need for a cheaper rate of postage was great. Business men had long complained that the cost of postage on letters had been outrageous—eightpence, for instance, from London to Brighton! At first there was much doleful shaking of heads. The Post Office would be ruined said the pessimists; but in a few years everybody remembered with gratitude the name of Rowland Hill, the man who worked so hard to bring about this much-needed reform.

1842.—The queen took her first railway journey travelling from London to Windsor. What a time of excitement! Very few people had up to that time travelled on a train. The Master of the Queen's Horse, whose business it was to arrange for the journey, was greatly put about by this "mad" way of travelling. For two hours he had been inspecting the engine. How he amused the engine drivers, for they were well aware that he knew nothing about engines. And to add to their amusement the queen's coachman insisted on mounting the engine to preside over it. At the end of the journey he was as black as a sweep and his uniform was ruined! But the journey was historic. It set the royal seal on travelling by this newly invented method.

1844.—The first telegraph system was installed.

1849.—It was January 31. A great public banquet was being given in the Free Trade Hall in Manchester. At a few minutes to twelve, midnight, the band struck up, "There's a good time coming boys." Two thousand people rose in their seats to sing the chorus. There was a great hush. All sat down. As the chairman rose the clock struck twelve. Amid profound silence he said: "The good time has come!" Then the guests rose and filled the vast hall with one mighty cheer. At that moment, on

February 1, the *Corn Law Act* of 1846, had come fully into operation. For the future there was to be no more duty on imported corn. Gradually Sir Robert Peel, the Prime Minister, and others had been striving to increase the prosperity of the country by doing away with duties on imported goods. "Free Trade" was now the cry up and down the country. Men could buy in the cheapest market and sell their goods cheaply to the people. Within a few years industry was booming. People in thousands left the country districts to work in the factory towns of the north and midlands. The face of Britain rapidly changed. Hundreds and thousands of acres of corn land were put back to grass; the cottages fell into decay. Soon millions of people were herded together in rows upon rows of unlovely houses which had been built about the factories. Some called it the *Golden Age* of industry, but it is not "All Gold that Glitters."

1850-51.—Gold was discovered at Ballarat and Bendigo in Australia. So far the continent, which had been added to the British Empire by Captain Cook in 1770, was very thinly inhabited mainly by emigrants from Britain. Now there began a rush to the goldfields. The news spread rapidly; crews deserted their ships, clerks left their offices and farmers their land in their anxiety to get rich. A few made their fortunes; most of the gold-seekers made less than if they had stayed at home, but many of these settled in Australia and found that sheep-farming and agriculture were more profitable than mining. In the course of five years the population was doubled, chiefly by emigration from Great Britain. Imagine the voyage of the emigrants. They went mainly by sailing ship down the coast of Africa, past the Cape of Good Hope and right across the Pacific Ocean, nearly 14,000 miles on a voyage which lasted at least ten weeks! (The Suez Canal had not yet been cut.)

1851.—This was probably the happiest year in Queen Victoria's life. She had just

opened the Great Exhibition in Hyde Park. Under an immense roof of glass, the *Crystal Palace*, there were displayed the wonders of the world and the latest of the world's inventions. The queen was so very happy because the idea for the Exhibition was her husband's, the Prince Consort's. The queen was very proud of her Consort. They worked daily together at their arduous state duties. The queen relied much more on the advice of her Consort than on her Prime Minister.

1854.—War! Britain had joined France in a war in the Crimea (an oblong peninsula of land on the north side of the Black Sea) against Russia. Only four years had passed since the Great Exhibition which it was hoped would begin a period of lasting peace to all nations, and now this tragedy had happened. Russia complained with good reason of the treatment of Christians by the Turks. The Tsar, Nicholas I., intended to seize some Turkish lands. Britain was alarmed. If Russia won lands in Turkey she might get some control in the Mediterranean and perhaps, one day, interfere with Britain's communications with India.

The war was shockingly mismanaged. Everything the soldiers needed was lacking; shelter, warm clothing, suitable food, hospital supplies. Thousands fell victims to frost-bite, cholera and slow-fever. For the first time in history, through the electric telegraph, daily reports were published of the progress of the war. The accounts were alarming and there was a public outcry against the Government. Fortunately at this time there came to the rescue of the men in hospital the brave Florence Nightingale, whom everyone remembers as the "Lady of the Lamp." The queen herself superintended the committee of ladies who organised relief for the wounded, and she instituted the Victoria Cross—*For Valour*.

The war ended in 1856. Russia, defeated, was not allowed to take any part of the Turkish Empire.

During the war the famous charge of the Light Brigade of cavalry took place at

Balaclava. The British guns were in danger of being captured by the Russians, so Lord Raglan sent word to Lord Lucan, the commander of the cavalry, to advance immediately to save the guns. Owing to some mistake, the cavalry charge was made against the wrong part of the enemy's lines. The cavalry had half a league (about a mile and a half) to gallop across a valley to the Russian guns. As the men rode, the guns on either side of the valley opened fire on them and soon those at the end did the same:

" Cannon to right of them,
Cannon to left of them,
Cannon in front of them
Volley'd and thunder'd."

Some of the men reached their goal and cut down the gunners, but out of a total of 673, 110 were killed and 134 wounded. Although the soldiers knew that there must have been a mistake in the order, and that "some one had blundered," they felt it their duty to obey even in the face of almost certain death.

The Poet Laureate, Tennyson, had published in December of 1854 his poem, *The Charge of the Light Brigade*, and in the following August a thousand copies of the poem were printed and distributed among the troops in the trenches before Sebastapol.

1857.—Mutiny! On Sunday, May 10, the sepoys at Meerut in India shot their officers and murdered every European they could find. By the queen in her palace and by the humblest peasant in his cottage the news was received with blank dismay. What had happened to bring about this disaster? Less than ten years before, the Punjab, the country of the brave Sikhs, had been added to the Empire, by the combined help of British and native soldiers. In the Indian army there were eight sepoys to one British soldier. No one in the Mother Land had any idea of unrest among the Indian sepoys.

There were, however, several reasons for discontent. The Indians, a simple people who worked mainly on the land, were not altogether pleased with the ways of the energetic British who had made canals, roads and railways. British missionaries, too, were trying to change their centuries' old religion. Then it was told how the cartridges used in the new Lee-Enfield rifles were smeared with the fat of cows and the lard of pigs. (Fat was put on the cartridges to keep out the moisture which would ruin the gunpowder.) The rifles were not automatic. The soldier had to bite off the paper end of the cartridge with his teeth, and it was to the Indians a grave religious offence to touch the fat of the cow or pig for to some the cow was a sacred animal and to others the pig was an unclean beast.

The Mutiny spread like a flame. The towns in the Ganges valley,—Delhi, Lucknow and Cawnpore—were closely besieged. The position of the British soldiers and civilians was desperate. Some frightful deeds were done by the rebels. At Cawnpore, a cruel native prince, Nana Sahib, treacherously shot all the British soldiers and slaughtered the women and children, throwing their bodies into a deep well. Only four people escaped the massacre. A terrible cry for vengeance went up from the people at home. The shocking deed was spoken of for long years afterwards. British troops were hurried out to India; they had to make forced marches of hundreds of miles in the scorching heat of summer, for railways had not yet been laid to the towns in the Ganges valley. Great army leaders led the troops: Nicholson recovered Delhi but was himself killed; Havelock and Outram fought their way to the relief of Lucknow and were themselves besieged, to be relieved later by Colin Campbell. At last the Mutiny was crushed. The wicked Nana Sahib escaped and was never heard of again. By public subscription a beautiful statue of an angel was erected over the well into which the women and children were thrown.

What was the chief result of the Mutiny?

The rule of the East India Company came to an end and the British Government ruled the land directly.

In 1877, the queen assumed the title of "Empress of India" and the letters Ind. Imp. (*Indiæ Imperator*) appeared on British coins.

1861.—Tragedy! The Prince Consort died on the morning of December 14. For several days past people throughout the land had been praying and hoping for the recovery of "Albert the Good," for by that name he was now known. The grief of the queen was overwhelming and the sympathy of the whole nation went out to her.

Albert the Good was finally laid to rest in a magnificent tomb erected by the queen and royal family at Frogmore.

Poor queen! She was only forty-two years of age. How would she fare without her adored husband who had been her main guide since their marriage? The queen shut herself up with her grief and for a long time was rarely seen in public.

Soon many public monuments were erected throughout the land. Among them were the Royal Albert Hall and the Albert Memorial in London. The queen instituted an Albert medal in reward for gallantry in saving life and also the order of Victoria and Albert.

1868.—The queen had a new Prime Minister—William Ewart Gladstone. He was a learned man and a wonderful orator who became the greatest of Liberal statesmen. (*Liberal* was the name of a new party formed by the union of the old Whigs and the new Radicals.) The queen was never fond of Gladstone. He had such a staggering amount of knowledge and his language was so ornate that he overwhelmed the queen. "He lectures me as if I were a public meeting," she is reputed to have said. Gladstone wanted to reform everything, and he certainly reformed a good deal. We now best remember him for three things: (1) For his long attempts to give *Home Rule* to Ireland;

but in this he failed for the British were not yet prepared to follow Gladstone in giving Home Rule to Ireland.

(2) That he was Prime Minister at the passing of the *Elementary Education Act*, 1870, by which every child in the land was at last able to receive some education.

(3) For the *Ballot Act*, 1872, by which at long last every voter at an election was able to vote in secret.

Gladstone dealt successfully with many other great matters. He was adored by his followers and his picture hung in more humble homes than that of any man before or since. Gladstone had a great share in making the reign of Queen Victoria "Sixty Glorious Years."

1874.—The queen had another Prime Minister—Benjamin Disraeli, now generally remembered as Lord Beaconsfield. Disraeli, too, was an extraordinary man who had sat in Parliament since the queen's accession in 1837. Like his rival, Gladstone, he, too, was a great orator who could make men listen to him. In his maiden speech in Parliament he was laughed down, but speaking in a remarkably loud and almost terrific voice he retorted to his mockers, "I have begun several times many things, and I have often succeeded at last; ay, sir, and though I sit down now, the time will come when you will hear me." And hear him they did. The queen liked her new Prime Minister. He studied to please her and explained State matters in a witty, yet simple way. He had completely won over the *Conservative* party (the new name for a party of the old Tories together with some of the old Whigs who could not work with the Radicals of the Liberal Party).

Disraeli was specially interested in what went on over-seas. He was fired with the thought of uniting the colonies in close touch with the homeland under the rule of his beloved queen. He took every opportunity to preach "Imperialism"—the closer union of all parts of the Empire. In 1876,

Parliament conferred on the queen the title of "Empress of India" which was assumed on January 1, 1877, and for his services Disraeli went to the House of Lords with the title of Earl of Beaconsfield.

For what do we now remember Disraeli best? (1) For the clever way in which he secured for Britain the controlling influence over the Suez Canal, a great engineering feat completed in 1869 by a Frenchman named de Lesseps. The canal, which connects the Mediterranean with the Red Sea, is the most important route to India, Australia, New Zealand and the Far East. Very cleverly Disraeli borrowed the money (£4,000,000) from Rothschild, the banker, to buy the shares of the Khedive of Egypt. It was a race against time, for the French, who already had a number of shares, were anxious to buy more. Disraeli was first and the queen and her people heartily congratulated him on his clever deal.

(2) For the *Treaty of Berlin* in 1878 when, with the help of a great German statesman, Bismarck, he prevented the outbreak of war between Russia and Britain. Once again Russia had been trying to gain control over Turkey, but Britain sent a fleet and Indian troops (by means of the new Suez Canal) to interfere. Lord Beaconsfield, as he was now, had reached the highest point of his career when he returned from Berlin bringing, as he said, "Peace with Honour."

1885.—General Gordon killed at Khartoum! The tragic death of this great soldier was a terrible shock to the queen and her people. Gordon had been sent by Gladstone to withdraw the British troops from Khartoum, the capital of the Sudan in north-east Africa. Two years before, a prophet who proclaimed himself the *Mahdi* (the last of the Prophet Mohammed's twelve disciples) attempted to drive out the Egyptians and whites from the Sudan. Thousands of Arabs and Negroes flocked to his standard when he proclaimed a Holy War. Gordon was sent with instructions to withdraw the garrison from Khartoum to safety in Egypt.

But, once there, Gordon decided that he would never give up the Sudan and he determined to crush the Mahdi. Most of the newspapers urged Gladstone to send a strong force to the Sudan. The queen said that he ought to do so. But Gladstone's policy was always a policy of peace and he refused to be forced by public opinion against his own judgment to reconquer the Sudan.

For nearly a year (1884-1885) Gordon maintained the siege, sending occasional messages to Gladstone urging him to send help. Then for five months there was no news of Gordon for no messages could get through the enemy lines. It was a terribly anxious time for the queen and her people. At last Gladstone sent a relief force under General Wolseley to go up the Nile to the relief of Khartoum. It arrived two days too late! The relief force found Gordon's diary in which he had written: "I have done my best for the honour of our country. Good-bye. —C. G. Gordon."

In Britain a great storm broke over Gladstone, for Gordon had become the idol of the people. The queen expressed her anger and, soon after, Gladstone's ministry ended, although he was later Prime Minister again. Gladstone was not altogether to blame, for Gordon had not carried out his mission according to his instructions.

The reconquest of the Sudan was accomplished by Sir Herbert Kitchener in 1898.

1899.—It was the last year of the 19th century and a very gloomy year for the queen and her people. Britain and men from all the Overseas Dominions were engaged in the South African War. For long there had been disputes between the British settlers, who were mostly interested in trading and in the gold and diamond mines, and the Boers, who were mostly farmers of Dutch origin, for the first European settlers came from Holland. Paul Kruger, the President of the Boers in the Transvaal, was autocratic and refused the British mine owners all parliamentary rights. Attempts

were made at a peaceful settlement, but in vain. In October, 1899 war began.

"Forty thousand horse and foot
Going to Table Bay"

wrote Kipling during the war. Like most of his countrymen, he believed that a handful of farmers stood no chance against the pick of the British army. They would soon sue for peace. It was a mistaken view. The Boer War lasted until 1902 and the first part of it went distinctly in favour of the Boers. With no artillery worth the name and no organisation for field-warfare, these farmers knew every inch of the country and played a masterly game of manoeuvring and skirmishing. The British were not properly prepared for war and could not get sufficient troops to the front in the early days. Soon Kimberley, Ladysmith and Mafeking were besieged by the Boers. Attempts to relieve the towns met with disaster.

For Britain the year ended in unrelieved gloom, but the next year, 1900, brought happier results. Men came forward from all parts of the Empire and a new army, under Lord Roberts as Commander-in-Chief (he was at this time sixty-eight years old) with Kitchener as Chief-of-Staff, arrived in Africa. Both Roberts and Kitchener came of military families, the former having been born in India in 1832. Kitchener, who impressed people by his sphinx-like appearance and his piercing blue eyes, had acquired an excellent reputation in Egypt. Now, between them, these two slowly brought the Boers to book. Roberts made a wide circular sweep from the Cape to Pretoria; Kimberley was relieved and Cronje, a notable Boer leader, beaten at Paardeberg. Then it remained to relieve Sir George White in Ladysmith and Baden-Powell in Mafeking. The first task was accomplished early in 1900; the second in May of that year.

1900.—May 17.—It was late in the evening. The usual London crowds surged

about the streets; newspaper boys shouted the latest headlines; the theatres were full. Suddenly, in one theatre the manager came forward, stopped the performance, and in a voice full of emotion said, "Mafeking has been relieved!" The long-awaited news had come at last. Britain went wild with delight over the relief of Mafeking; bonfires flared, rockets roared, houses were decorated with flags and citizens wore red-white-and-blue flowers. The West End of London became a bedlam; windows were smashed and policemen lost their helmets. A new word, "to maffick," was invented.

The reason was that the defence of Mafeking had stirred the imagination. Baden-Powell had endured a siege of two hundred and eighteen days. While it went on, he showed himself an example to all.

He edited a journal to which he contributed pen-and-ink sketches; he acted and even danced in entertainments designed to keep up the spirits of the besieged. Meanwhile the besieged had very little to eat save soup made from bony horses, and the invalids, it is said, had puddings flavoured with face powder from the local barber. The Orange Free State and the Transvaal were formerly annexed in 1900. Kitchener had the task of cleaning up irregular bands of Boers who did much damage. In 1902 the gallant enemy laid down its arms. In 1909 the four chief states were united in the Union of South Africa and the first Prime Minister was Louis Botha, a former Boer general.

Kruger had died in Switzerland in 1904. His body was taken to Pretoria, his old capital of the Transvaal, where it was buried.

1901. Jan. 22.—Death of Queen Victoria. The queen did not live to see the end of the

Boer War, for she died in her eighty-second year after a long and glorious reign of sixty-three and a half years. It was by four years the longest reign, and by three days the longest royal life in English history. In 1887 and 1897, Jubilees held in her honour showed that the affection of her people had at the end no limits. In the second Jubilee some rough men broke the barriers and ran along with the carriage. "Bravo, old girl!" they shouted. "You've done it well." They were right. Victoria had served royalty well. She had presented to her subjects a shining example of the two best things in the world—hard work and a happy family life.

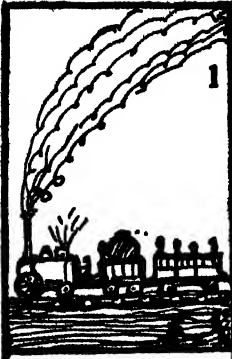
The queen's devotion to her Empire and her honesty of purpose are fittingly illustrated by a prayer from the queen's journal, dated January 1, 1878: "May this year bring us peace, and may I be able to maintain strongly and stoutly the honour and dignity of my dear country! . . . God help me in my arduous task!"

India was always near the queen's heart. Sir W. R. Lawrence in his book *The India We Served* wrote that, at the time of the queen's death: "From my verandah in the early morning of February 2, 1901, I saw a sight which set me thinking. I saw the greater part of Calcutta's dense population file solemnly past on their way to the Great Park to sit there all day, without food, mourning for the great Queen-Empress who had made them her children."

Queen Victoria had eight children and at the time of her death there were thirty-seven great-grandchildren alive.

"Her court was pure; her life serene;
God gave her peace; her land reposed;
A thousand claims to reverence closed
In her as Mother, Wife and Queen."

PICTURE SUMMARY



1. Queen Victoria made her first railway journey, 1842.
2. Sir Robert Peel introduced a new police force.
3. The *Great Western* made her first steam voyage across the Atlantic, 1838.
4. The *Great Exhibition* was opened, 1851.
5. Florence Nightingale, the founder of the Red Cross, at the Crimea, 1855.
6. The Albert Hall was erected in memory of "Albert the Good," the Queen's Consort, who died in 1861.
7. The Indian Mutiny, 1857. The Queen assumed the title of Empress in 1877.
8. Benjamin Disraeli bought shares in the Suez Canal, 1876.
9. The Queen had two Jubilees, 1887 and 1897.



XIX. THE WORLD WARS



FIRST WORLD WAR

The hand on the Century Clock now points to the year 1914, when began the First World War in which Britain

played a leading part.

The causes that brought about this terrible war are not easy to understand, yet every boy and girl to-day should know something about them.

During the 19th century some countries in Europe did their utmost to make their people "patriotic." They wanted them to think of their own country above all others. In Britain, Lord Beaconsfield preached "Imperialism"—the knitting together of the peoples of Britain and her Empire.

In Germany the people had for centuries been scattered in many states throughout Central Europe and the time had now come when the Germans meant to unite in one patriotic nation—by the sword.

In Italy, too, the scattered states were united into one intensely patriotic people—also by the sword.

When nations become excessively patriotic and think only of themselves they are apt to forget that there are other people in the world who are just as anxious to live as they are. They forget that all people on earth are human beings who ought to be able to live in one great brotherhood. In other words, intensely patriotic nations often become deadly rivals of one another.

Perhaps you will remember how one German state, Prussia, when ruled by Frederick the Great, began to extend its land by adding part of Austria to its own territory. About the middle of the 19th

century Prussia set about bringing all the German states into an Empire. Prince Bismarck, the Prussian Chancellor, was for many years the real maker of modern Germany. His ideals and plans can be understood from his own words: "It is not by speechifying and majorities that the great questions of the time will have to be decided, but by *blood and iron*." Pursuing this terrible policy Prussia engaged in important wars in which she was victorious and added largely to her Empire. In 1866 Prussia attacked Austria which had been for centuries the ruling nation among the Germans in Central Europe. In the *Seven Weeks' War*, Prussia was entirely victorious. More lands were added to her Empire and now Prussia was looked upon as the head of the German states in place of Austria.

Prussia now wanted to be supreme in Europe, so in 1870 she attacked France. This *Franco-Prussian War* was soon over. Prussia was again victorious; new lands, notably Alsace and Lorraine, were added to her Empire. Other German states joined with Prussia to form the German Empire. The king of Prussia now became the German Emperor or Kaiser.

Austria, disappointed at her losses, then began to look round for conquests in the Slav countries of south-eastern Europe, and Germany was prepared to help Austria at any time if need should arise.

As the years went on Germany and Britain gradually became rivals. One cause of this was that the new Germany rapidly became a great manufacturing country and of course a rival for Britain's trade in other lands. Then Germany began to acquire lands in Africa and other parts hoping to rival Britain by having a large world Empire. But most important of all, Germany in 1898 began to build a great navy. This German navy seemed to most Englishmen

as a dagger pointed at the heart of Britain, for it had been her navy that had kept her so long secure.

France never forgot her lost lands of Alsace and Lorraine and she hoped some day to win them back.

Germany, Austria and Italy made close alliance to help each other in case of war. Later, Britain made agreements with France and Russia for she feared the growing power of Germany and her Allies. British statesmen honestly believed that they were only doing their best to defend their country, but not so the Germans. They believed that Britain was plotting their country's ruin. So for many years, especially after the death of Queen Victoria, the rivalry between Britain and Germany grew greater and greater.

The Kaiser, William II., a grandson of Queen Victoria, declared that if Germany was to secure "a place in the sun" it could be done only by "the good German sword." Attempts were made from time to time to secure a footing in northern Africa at the expense of France, but on each occasion Britain interfered and Germany greatly resented this interference. Germany then began a "peaceful penetration" of Turkey in Asia, for here, near at hand, were wide lands where Germans could settle and trade. A railway controlled by Germany was to be built right across Europe to link up the North Sea with the Red Sea and the Persian Gulf. This, if completed, would have been a menace to Britain's control of Egypt, her Empire in India and even to the Dominions of Australia and New Zealand. Thus this "peaceful penetration" was another cause of rivalry.

Now began a race to arm. Enormous sums of money were spent by Britain, France, Russia, Germany, Austria, Italy and other countries on armies and navies. In 1898 Germany began to build a mighty navy. Britain, in reply, laid down dreadnoughts and super-dreadnoughts. The crushing burden of taxes to pay for these armaments led some countries to meet in Peace Conferences so that they might agree to stop

this race to arm. But Germany would not agree to abandon any of her plans for conquest, her deep-laid scheme for world power.

The Germans had come to believe that they had a higher culture (*Kultur*) than any other people. Between the years 1871, when France was conquered, and the beginning of the World War in 1914, Germany had grown in a way never before equalled in the history of Europe. Her population had increased from forty millions to sixty-five millions, her foreign trade was second in Europe only to that of Great Britain. The Germans were justly proud of their army, navy and police; of their splendid buildings, schools, universities and institutions of science. Many of them looked on other peoples with contempt. "We are the salt of the earth," the Kaiser once told his people. And on another occasion he said, "God has called us to civilise the world; we are the missionaries of human progress." But first other nations must be conquered.

In 1898 was formed the *Pan-German League* whose ideals were the conquest of the world. The League included officers in the army and navy, landowners, rich merchants and manufacturers, bankers, high government officials—all who hoped to become richer by conquest in war. The Pan-Germans believed that they could conquer Europe bit by bit; first France, then Russia and Poland, while Austria was to win the Slav states in the south-east. Once having conquered Europe the members of the League looked forward to the conquest of Great Britain and her Empire and then the dominion of the world.

Members of this powerful League earnestly and constantly preached their gospel of *Kultur*. In the papers, in the churches, in the schools throughout the Empire they taught that war is a holy thing; it is Nature's way, they argued, to weed out the weak and sickly nations, leaving only the "salt of the earth," the great German peoples. The people were taught day in and day out that France was preparing for revenge, that

Britain was waiting to destroy their grand navy, that Russia and other Slav nations were only hoping for the time to march in and take their lands away. The preachers glorified war and conquest. "My confidence," said the Kaiser, "rests upon the army."

Every preparation was made for "The Day." There was to be swift and easy victory. By the summer of 1914 the Germans were ready—fortifications, armies, munitions, railways, stocks of food, everything needful for instant attack had been thoroughly prepared. Then an event occurred exactly to the liking of Austria and Germany.

The beginning of the War.—"The Day" so eagerly awaited by members of the Pan-German League had come. On June 28, 1914, the Archduke Ferdinand of Austria (heir to the throne) and his wife were murdered by Slav assassins at Sarajevo, the capital of Bosnia. This was a Slav state which Austria had annexed, and the two murderers belonged to a Serbian secret society whose object was to win Bosnia back from Austria and add it to the kingdom of Serbia. This murder was the match that set the world in flames.

On July 28, 1914, war was declared by Austria on Serbia whose officials were said to have been the real plotters of the murder. Sir Edward Grey, the Foreign Secretary of Great Britain, did his utmost to arrange for a peaceful settlement, but his efforts were of no avail, and we now know why—the chief ministers of Austria had decided to force war on Serbia no matter what happened. Germany went to the help of Austria; Russia and France to the help of the Serbs. Germany marched through Belgium on to France in spite of having agreed never to do so. She regarded her treaty as a mere "scrap of paper." Then Britain went to the aid of France and Belgium, and soon the war spread to other countries. Italy (deserting her Allies) and, later, America, joined Britain and France.

The war lasted four and a half years before Germany and Austria were beaten.

An Armistice was signed with Germany on November 11, 1918. Fifty million men took part in this war, which was fought on land, on and under the sea and in the air. At the end of it Russia had collapsed and was under the rule of the Bolsheviks; Austria was in utter ruin, split up into a number of fragments; Germany had lost her navy and her colonies, and had to cede valuable areas in Europe including Alsace and Lorraine, which went back to France; Central Europe was separated into a number of new nationalities—independent Poland, Czecho-Slovakia, Yugoslavia were the chief—over ten million men had been slain, the people in some states were starving, and most of the countries of Europe were practically ruined.

The First World War was totally unlike any war of earlier days. Not only were there much greater numbers of men engaged in it, but the inventions of clever men made the warfare more deadly than ever before. On the sea the most terrible weapon was the submarine by which hundreds of vessels were sunk without warning. Naval and land guns were very much more powerful than they had ever been. For the first time in the world's history aeroplanes were used to drop bombs on enemy positions, towns, railways, factories and other places.

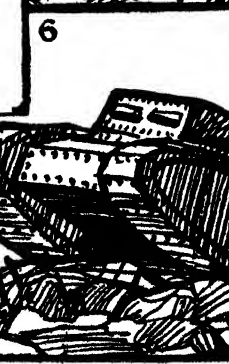
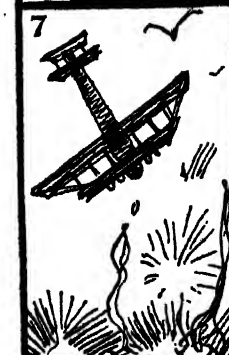
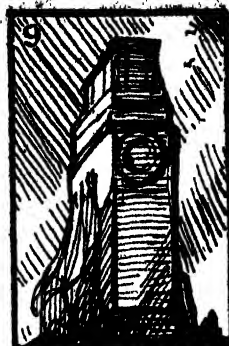
The outstanding weapon of the British that had most to do with winning the final battles was the tank. This was a huge petrol-driven carriage that could travel on great caterpillar tracks over almost any kind of country, and which carried powerful guns.

The Germans tried at one time to win the war by the use of poison-gas, and the soldiers on whom it was first used suffered greatly. But the British and their Allies quickly had gas-masks supplied to them and this dreadful method of warfare came to nothing.

The Second World War, 1939-1945.—After the First World War the German people were poor and wretched. The boastful Kaiser had fled from the country and Germany had become a republic. Russia, too, had become

PICTURE SUMMARY

1. Britain and Germany built great warships.
2. The call to arms, 1914.
3. The Zeppelin, a German invention for dropping bombs.
4. German submarines sank many British ships.
5. The Germans first used deadly gas.
6. The British invented tanks.
7. Flying machines did terrible damage.
8. Men from all parts of the Dominions helped the Mother Country.
9. Armistice Day was kept on November 11. The nearest Sunday to that date is now kept as Remembrance Day.



a republic now usually called the Soviet Union.

Slowly Germany began to recover from the war, and then arose a dictator to rule the land. He was Adolph Hitler. With his followers the Nazis he began to make a new Germany. The Nazis gained power until in 1933 they became supreme in the land.

Again the Germans had the desire to become the greatest nation in the world. Again they prepared a mighty army, a huge air force and many submarines. In February 1938, Hitler declared himself the head of the German army. One month later his forces marched into Austria and, without any fighting, Austria was united with the German Empire.

On September 1, 1939, Germany invaded Poland and in less than a year the vast armed forces of Germany crushed in turn Poland, Denmark, Holland, Norway, Belgium and France. The hordes of Germans savagely bombed, burnt, plundered and killed. Hundreds of thousands of people were driven into camps and factories to work for the Germans.

Great Britain and France had promised to help Poland. On September 3, 1939, they declared war against Germany and a British army was sent to France.

On May 28, 1940, Belgium gave up the struggle. This was a great blow to Britain, for German forces now faced the English shores and the British troops in France had to be brought back.

Every possible vessel from the largest warship to the tiniest boat was used to rescue the troops from the beaches of Dunkirk, where they were being bombed by day and night. Many brave deeds were done and in spite of the enemy the greater part of the army got safely back to England. On June 17, 1940, France gave up the struggle. Great Britain now stood alone to face the foe in the "Battle of Britain".

On June 10, 1940, Italy, as an ally of Germany, declared war against Britain and France. Italy was ruled by a dictator named Benito Mussolini.

Hurried preparations were made with all sorts of fortifications to defend Britain's shores, and thousands of men known as the Home Guard drilled and watched. Among the secret weapons got ready against invasion was that of "setting the sea on fire" with petrol.

Every man, woman and child in Great Britain was provided with a gas-mask in case the enemy should use poison-gas—but it was never used. Millions of women and children were evacuated from London and other cities and towns to places in the country, where they might be safer from enemy aircraft.

Early in August 1940 the Germans began in earnest to prepare the way for the "invasion of Britain". Huge formations of deadly aircraft rained bombs on London and other cities and towns, but the skill and bravery of Britain's fighter airmen saved the country.

For the whole five and a half years of war a terrible submarine warfare went on continuously, for the Germans had hoped this time to starve Britain into surrender. But though the losses in ships and men were very large, food and supplies never failed to be brought across the seas by the Merchant Navy convoyed by aircraft-carriers and other ships of the Royal Navy.

In December 1940, British and Dominion forces attacked and routed Italian invaders in western Egypt. The Germans went to the help of the Italians, but slowly and surely the enemy was driven westwards out of Africa. The victorious army went on to invade Italy. By September 1943 the Italians in the middle and south were forced to surrender. The Germans held the north of the country until the end of the war.

In June 1941, Germany turned for a time away from Britain and attacked the Soviet Union. With their great armies and powerful air forces the Germans swept over hundreds of miles of country and besieged Leningrad, Stalingrad, and Moscow. When winter came the fighting died down. In the spring of 1942, with the help of supplies from Britain

and America, the Soviets slowly began to drive the foe out of the land.

By November 1943 the Soviet forces had almost driven the Germans to the borders of Poland. From that time to the end of the war the victorious Soviets continued pushing westwards through Poland and Hungary towards Germany.

Since July 7, 1937, Japan had been at war with China and had occupied a large part of the country. Japan became an ally of Germany and Italy, and in December 1941 her air forces attacked Pearl Harbour, the American naval base in Hawaii. Japanese soon began to over-run British, French, Dutch and American lands in the Far East.

Then Germany declared war against the U.S.A. and from that time Americans with guns, lorries, cars, aeroplanes and other munitions came in their millions to help Britain in the invasion of Germany. Great and powerful forces of the U.S.A., Australia, New Zealand, India and Britain were soon on the move to drive out the Japanese from the lands they had over-run.

From the early days of the war British and Dominion aircraft had bombed German factories, railways, ammunition dumps and oil supplies. As the war went on the bombing became heavier and more deadly. The aircraft were greatly increased in numbers, speed and size, and the destruction they caused in enemy territory was very great.

In English history June 6, 1944, will be remembered as D-Day. It was the day when a large force of British, Canadian and American troops fought their way ashore on the Normandy coast and began the final conquest of Germany.

A wonderful harbour called "Mulberry" had been built in England and towed across the channel to the coast where the forces were to land. From Liverpool in the north, right through England to the south, and

under the sea to the Normandy coast, an oil pipe-line had been laid to provide the aircraft and vehicles with petrol. A tremendous bombardment by aircraft blasted a way for the invading forces.

Steadily with terrific fighting which lasted for eleven months the enemy was driven out of France and out of Belgium. The victorious troops over-ran a large part of Germany. The Soviets put their remaining strength into the fight and took Berlin. It was a heap of ruins from the constant bombing and shelling, and the Nazi leader, Hitler, was buried beneath them.

Shortly before the end Mussolini had been captured by some of his own countrymen and put to death, for he had brought Italy to ruin.

The war in Europe ended at midnight on May 7, 1945.

Except for the land fighting in China and Burma, the war against Japan had been mostly a sea war carried on mainly by American and British navies and air forces over vast distances in the Pacific Ocean. Gradually the lands over-run by the Japanese were recaptured, most of their navy was sunk, and industrial towns were blasted by aircraft.

The navies and air forces were gathering for the invasion of the mainland of Japan when, on August 6, 1945, the first atomic bomb was dropped on Hiroshima. On August 9 another was dropped on Nagasaki. This new kind of bomb did such frightful damage that Japan surrendered on August 15, 1945.

The eight years' war with China came to an end and the heroic people were freed from their enemy.

The Second World War ended with British, American, French and Soviet armies in occupation of Germany and Austria, and Americans and British in occupation of Japan.

XX. THE TWENTIETH CENTURY

CHILDREN'S STORY

During the 20th century such great changes have been made that life has been generally more pleasant and comfortable, and very much more varied for the majority of the people. A great deal of the heavy drudgery on which mankind has toiled for countless ages is now performed by machinery. Mechanical diggers, giant cranes, electric drills and other wonderful tools save the work of human muscles. People find it easier and pleasanter to travel on business and pleasure; motor cars are now within the reach of people with moderate incomes.

In recent years many new roads have been constructed—wide and straight arterial roads, on which motor traffic can travel at speed. Every week-end, especially during the summer, thousands leave their homes in town and visit the countryside or the sea. Unfortunately, the increase in motor traffic has led to a great increase in accidents, several thousands being killed and many more injured each year.

The streets in large towns are brilliantly lighted, and the system known as "Neon lighting" illuminates the shops at low cost.

The houses are more comfortable, with more convenience than ever before. Electric light is general in most towns, and, through the *Grid* system, electricity for light and power is now distributed to remote country places. By the *Grid* system electricity is generated in a central place and distributed by wires throughout the country. Gas or electric stoves, electric sweepers, flat irons, kettles, washers and mangles and sewing machines do much to lighten the work of the housewife. By the introduction of stainless cutlery, chromium-plated equipment, *staybrite*, *bakelite*, flexible glass and other modern substances, houses are kept cleaner and more attractive.

Clothing, too, has become more comfortable and more varied. The day of home-made clothing has passed; comfortable and fashionable clothing is within the reach of all except the very poor. Women and girls have more dresses and better dresses than their grandparents had, while most men have more than a working suit. There is more colour in life to-day than ever before. A May Day pageant of the Middle Ages would look dull and colourless in comparison with a modern scene on a summer beach, with the bright colour of the dresses, bathing costumes and wraps, sunshades and tents. Colours undreamed of by emperors of old are now within the reach of all; they are due to the use of aniline dyes made from coal tar. Another substance which has greatly improved clothing is artificial silk or *rayon*, a material of which thousands of tons are made every year and used for clothing, curtains and all kinds of material for decorating the home. In addition, wood pulp, which supplies the cellulose from which rayon is made, is also used in many forms for making films, toys, cutlery handles, and many other substances. Years ago mankind went to the rock, the plant, the ox, the sheep and the silkworm for materials to build his house and clothe and feed himself; to-day he makes his own substances to suit his needs. It is said that this is an age of *alloys* and *plastics*. Rubber, which for many years was used only for "rubbing out", to-day has a hundred uses in the electrical industry, and it is essential for motor vehicles.

In addition to the great development of motor traffic, enormous strides have been made in the development of aircraft. At the beginning of the century no man had ever flown in a power-driven aeroplane; to-day great machines carrying passengers and goods fly across the sky as regularly and as safely as ocean liners cross the seas.

Almost equal progress has been made in shipbuilding. The Cunarders of 1840 were 207 feet long and had engines of between 700 and 800 horsepower. The *Queen Mary*, launched in 1935, is over 1,000 feet long, and has engines which develop 200,000 horsepower. Equally with transport, other means of communication have grown extensively. News from all parts of the world is wired or wireless or telephoned to Britain continuously and published in newspapers which are issued several times a day. The newspapers, too, have changed; to-day almost as much news is told in pictures as in print, so that a newspaper of thirty years ago looks dull and unattractive compared with a modern newspaper with its photographs, sketches and diagrams. Wireless telegraphy or *radio*, an invention of the 20th century, brings news from far and near into our homes. In millions of homes is a wireless set, and people sitting by their firesides can "listen in" to news items, weather reports, market and stock exchange reports, sports bulletins, talks on subjects of general interest, concerts, variety programmes, dance music, and eye-witnesses' accounts of ceremonies and games.

Another invention which brings pleasure to millions is the cinema, the *pictures* to us, the *movies* to the Americans, and, since speech has been brought into them, the *talkies*. In every town of Great Britain picture palaces have been opened, where for a small sum one can see pictures describing topical events, scenes of beauty and interest, and plays. Motor buses nightly bring in people from outlying villages to the pictures in the nearest town. Warm, comfortable and cheap, the cinemas are patronised by millions every week, so that now it is no longer strictly true to say that "one half of the world does not know how the other half lives." Children to-day have a better knowledge of the habits and ways of life of people in far-off lands, of scenes in all continents of the world, the frozen north, the tropics and the lonely islands of the Pacific, than the most widely travelled

person had a generation ago. Books to-day are cheaper and more plentiful than ever before, and owing to the better lighting of our houses compared with the candle or oil lamp of our fathers, books form an ever present source of pleasure to thousands.

Progress has been very marked in the ways of dealing with the sick. Owing to the work of clever men and women operations are painlessly carried out in efficient and wonderful hospitals throughout the land. Every school child in the kingdom is regularly examined by a doctor during his or her school life and *clinics* are available for after school life.

People to-day have much more leisure time than had their fathers, mainly owing to the use of machinery in workshop, office and home; also, hours of labour are shorter. A century ago only rich people took annual holidays; the development of railways in the 19th century brought holidays within the reach of the middle classes; to-day every section of the population has its yearly week or fortnight at the seaside or in the country. Recreation in its various forms plays a greater part in the lives of the people than ever before; for ages the workers of all lands passed lives of drudgery and almost continuous work, with brief, occasional holidays such as May Day Games and Whitsun Ales; now every week-end sees millions playing or watching some form of sport. The first athletic meeting in this country was held at the Royal Military Academy, Woolwich, in 1849; to-day the football grounds alone will accommodate three million spectators. Golf courses provide healthy exercise for thousands of people, while tennis, once a game for the rich, is now played by all classes. On every day of leisure, too, large numbers of young people with haversack on back leave the crowded streets and tramp or "hike" over the countryside.

Some people deplore the attention given by this generation to recreation and games, but they overlook the fact that work to-day is generally more exacting than it was years

ago, and that the use of machinery has enabled goods to be produced much quicker than formerly, so that the needs of mankind can be supplied in a shorter time. One of the greatest problems before the world to-day is not the increased production of goods, but the better means of distribution, whereby the goods produced in such abundance can be brought within the reach

of all who need them. Not many years ago workmen laboured twelve hours a day for six days a week; to-day forty-eight hours a week is considered the maximum, and many people now believe that the work of the world can be adequately done in days of six hours.

On all sides is the desire to make the best of life day by day.

TEACHING NOTES

1. Steel.—Sir Henry Bessemer, 1813–1898, was making cannon for the Crimean War when it occurred to him that there was need for iron of a better quality. Two years of experiment led to a process for “The Manufacture of Malleable Iron and Steel without Fuel,”—the title of a paper read to the British Association. Success followed: works were built in Sheffield and cheap steel and iron soon became available. Bessemer was knighted in 1879.

The Bessemer process, which takes about thirty minutes, produces steel for machinery, wire, tools, nails, etc.

2. Telephones.—Many people lent a hand to the perfecting of the earliest telephones, but credit for the invention must go to an American, Alexander Graham Bell of Boston. He took out patents in 1876 and 1877. In 1937, there were 33,000,000 telephones in use.

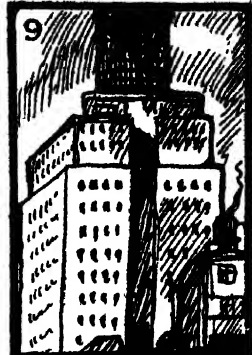
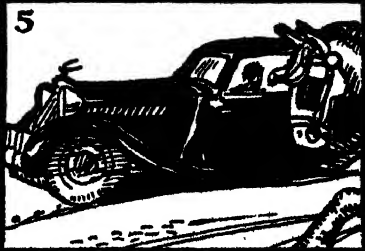
3. Medicine.—Absolute cleanliness, careful nursing and the use of anaesthetics are three of the most pronounced features of modern healing. The 19th century saw a great advance in all three. Before Simpson, operations were carried out on conscious patients: in consequence many major operations could not be attempted at all, while many patients died in agony. James Simpson of Edinburgh made his famous experiment with chloroform in 1847. Very slowly the

use of it spread. Pain under operation vanished. Even so, patients continued to die under the knife. Surgeons still worked under dirty conditions and festering wounds killed scores. Dr. Lister, an Englishman, wondered why. A Frenchman, Louis Pasteur, showed him. After many experiments Pasteur knew that diseases are caused by bacteria, small organisms visible only under a microscope. Through bacteria silkworms died of a certain organism fatal to silkworms; cattle died of anthrax, and dogs of rabies. So, thought Lister, *wounds are made to fester!* The hands of the surgeon, or the knife he used, must be covered with thousands of bacteria which went to the patient under operation. The problem was how to kill them before they reached the patient? Lister, too, experimented and watched. The result was the use of *antiseptics*; i.e., of preparations in which bacteria cannot live. A further result was the process of rendering every operation *aseptic*; i.e., before an operation everything is freed from bacteria by scrupulous sterilising of instruments, gloves, etc.

But doctors and surgeons must not have the whole credit for the patient's recovery. Nurses do their share. At one time the nurses were ignorant and dirty old women. Sarah Gamp was one of this kind. The Crimean War brought about a great change. Florence Nightingale reorganised the hospital arrangements for British soldiers and saved

PICTURE SUMMARY

1. George Stephenson's famous "Puffing Billy."
2. Sir Henry Bessemer invented a furnace for making steel, 1856.
3. By the telephone we can hear over long distances.
4. Doctors now perform painless operations.
5. Motor cars have taken the place of horses.
6. Men and women now fly.
7. Wood is made into paper and silk.
8. Music comes on the air.
9. Houses and factories are built of concrete and iron.



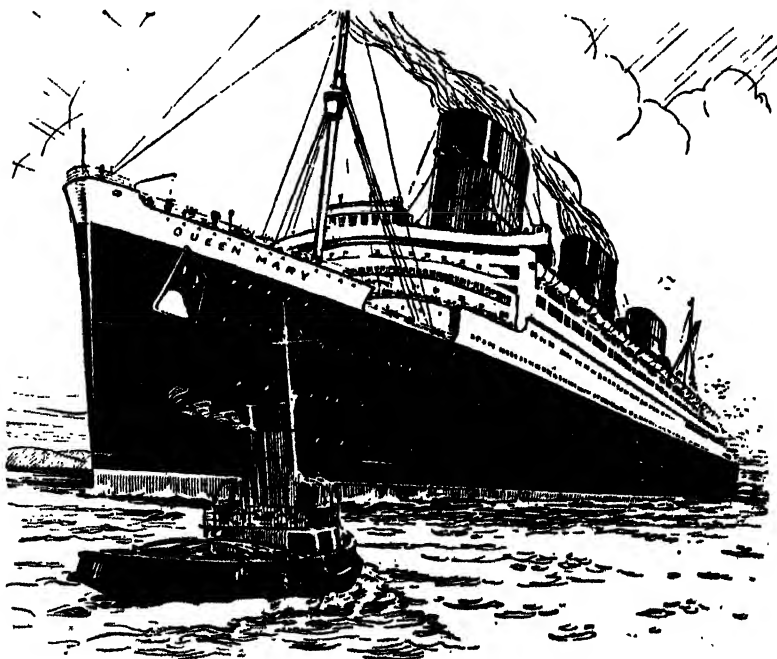
many lives. Afterwards, although an invalid, she began schools for nurses and raised to a much higher level the standard of the nursing profession.

4. Motors and Aviation.—Speed is the modern form of adventure. As regards automobiles, progress quickened after the perfection of the internal combustion engine in the period 1860–1876. Ford's "gasoline buggy," with a speed of twenty miles an hour, was on the road in 1893. Then came twenty years of experiment on the different parts; e.g., the number of cylinders used was always changing: sometimes a car had one cylinder, sometimes eight or even more. The World Wars saw a remarkable increase in the number of automobiles and a great improvement in their quality. They have

completely ousted the horse-drawn vehicle and even threaten the railways. Aircraft, too, owes much to the War. Men early began imitations of bird-flight and "gliders" were tried in 1891. But the first real sensation came in 1903, when the Wrights flew their heavier-than-air machine in North Carolina—for twelve seconds!

5. Wireless. Marconi demonstrated the possibilities of wireless telegraphy in 1896 and, eight or ten years later, transmission of sound began to be possible. About 1920, in America, programmes of music were given public broadcast. Since then this marvel has developed rapidly, and the B.B.C. supplies daily instruction and entertainment for millions of homes. The latest development is *television*.

(This course of lessons on *Turning Points in English History* has been written by E. J. S. Lay.)



THE "QUEEN MARY," 1936.

TWENTY ESSENTIALS OF NATURE STUDY

In their studies of Nature, the enormous field that gradually becomes available for the observations and discoveries of the children may often create a feeling of bewilderment. The knowledge acquired tends to be fragmentary and disconnected.

This course, specially useful in the last year of the Primary School, sets out in twenty lessons the main principles which govern the life and distribution of plants and animals. It forms a sound basis for work of a more biological character to be undertaken in the Secondary School. Every teacher in the Primary School will be interested in this unique presentation of Nature Study.

The twenty-four Class Pictures, Nos. 117 to 140 in the Portfolio, will be found of immense value in all the classes. A Pupils' Book containing the bulk of the work in this article is published separately.

I. ALL LIVING THINGS NEED AIR

PART I. WHY

Introduction.—Everything that is on the earth belongs to one of two great classes or groups: (1) living things, and (2) those without life. Living things include all kinds of plants and all animal life such as fish, insects, birds and human beings. All these are able to perform actions of one kind or another. They may swim, fly or run, grow bigger, and produce families to take their places when they die. Lifeless things, such as coal, iron, water and gas can do nothing by themselves.

Even the living things would be useless and would soon die if it were not for four important duties that must be carried out. These are: (1) Breathe air. (2) Take water. (3) Take food. (4) Take rest. Every living thing is formed in such a special manner that these acts can be performed regularly.

It is interesting to find out why and how these wonderful arrangements work.

Breathing, the first of the duties, is so necessary that a minute or two without air would cause death to most people. This, then, will be the first of the studies to undertake.

Movements and burning.—Plate I. shows various ways in which living things move during their lives. In the animal world there is also a great deal of movement inside the brain when it carries out its work. The heart and the organs of digestion, and many other parts of the body, are constantly in action, too.

The cause of all these movements may be compared with the burning that goes on in a bonfire. When boys and girls run they become more and more heated as though something were burning away, and this is actually what happens. A motor car passing down the road gives a good example of movement in machinery. In this case the

engine becomes so hot that a radiator containing tubes filled with cold water is fixed to the bonnet so that the heat may be taken away. Burning petrol gives rise to the heat as well as to the movement.

It is well known that no fire will burn at all unless air can flow freely from the bottom through the materials. Thus at home, ashes and dust are cleared out of the grate first and then sticks are laid cross-wise to permit plenty of air space.

All kinds of burning depend upon air in the same way. That is to say, *no movements of the body can take place and no machinery can run unless air is present.* The next section will show why.

Energy.—"How energetic they are!" These words are often spoken by grown-up people as they watch boys and girls playing games they really enjoy. Energy is the name given to the force or power that causes all moving parts to work. From where does this energy come?

From the examples already taken, the first thought would be that fuel supplies it. By that is meant food for the body, petrol for the engine, coal and wood for the fire in the grate and rubbish for the bonfire.

The great burning mass, the sun, sets free vast supplies of energy. This passes to the earth where all green things by their special way of living are able to trap it. The plants become food or are changed into soil and other materials. Thus, in time all living creatures and such plant products as petrol and paper become storehouses of energy. Energy imprisoned within the body does nothing at all. It must be set free so that movements or burning can take place. This is the great importance of air. *It sets free the active energy that all living things need to carry out their work.*

The motor engine shows very clearly how man has made use of this knowledge. In

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Plate I., No 7 shows an air lever, marked (a) on the handles of a motor bicycle. Look for one also on the steering wheel of a car. When the engine works, many little explosions are heard. Electric sparks ignite or set fire to jets of gas coming from the petrol, and energy is thus set free to give movements to the wheels. Before this can happen, however, the lever must be turned so that air can mix with the petrol gas. A motorist who forgets to do this cannot start his car.

In the example of the ordinary fire already mentioned, the reason why air spaces are necessary is now quite clear.

Although the importance of air to all living things can now be understood, the study does not end here. Scientists have found out that it is not air alone but only a special part of it that sets free energy.

Oxygen.—Air is a mixture of gases, one very active and the others not. The one that is responsible for the work that is done is known as oxygen. Fortunately, only about one-fifth of the mixture is made up of this gas, for if more were breathed the burning caused would be far too fierce for living things.

The great power of oxygen can be seen in a few examples of its use when separated from the other gases.

Most boys and girls have seen workmen joining pipes in the road, or welding, as it is called. Two cigar-shaped steel vessels lie beside them, one containing oxygen and the other a gas called acetylene. Screws are turned, the gases come together in a tube and a flame is lit that plays upon the metal. So fierce is the heat that the men must cover their eyes with a shield and the steel pipes melt like snow in the sun.

Men who work in sewers and in mines are sometimes poisoned by gases so that they cannot move and are almost dead. In these cases, doctors often pass little jets of oxygen into their bodies. By this means the sudden freeing of energy has saved lives that would certainly have been lost.

Lastly, when a party of men tried to climb Mount Everest, the highest mountain of all, everyone wore an oxygen helmet. At great heights there is so little air that it is impossible to walk and when a climber lies down he has not even the energy to turn over on his side. By breathing a little oxygen, however, his muscles can set free enough energy so that little by little the climb can go on.

From these examples and the points already mentioned, the real value of breathing now becomes clear. *Every movement of the body depends on oxygen.*

Ventilation.—The last illustration on Plate I. shows a few types of ships' ventilators. Ventilators are openings specially arranged in fireplaces, buildings and other places so that supplies of fresh air can flow in where needed. Movable windows are, of course, the chief ventilators in houses; but at home, in the cinema or at school, many other kinds may be seen.

The need for these, particularly where people gather together, seems to point to one conclusion. *Once oxygen has been taken from the air it is not returned by the body after use.* This is a fact. Besides setting free energy, oxygen unites with some of the waste material left from the burning that goes on. This, known as carbon, is changed into another gas and goes back into the air.

It is quite clear that this second gas, or *carbon dioxide* as it is called, must be driven out of a room by ventilation and a new supply of fresh air allowed in.

In places where much carbon dioxide has gathered there is little oxygen to set free energy and people complain of headaches and sleepiness. They say that the air in such a place feels "stuffy."

One example of this is seen by the pale faces and tired feeling of people who earn their living in crowded cities and towns. The supply of oxygen is reduced by the breathing of many people and also by the smoke and fumes coming from factories.

and motor vehicles. Whenever it is possible, townspeople take a holiday by the sea or in the country, where the pure air sets free the energy that will restore their bodies to health again.

Conclusion.—The reason why breathing is so important to all living things can now be understood. Before considering how it takes place, it is well to gather together the chief points that have been learnt. These are:

(1) All movements of living things are caused by a form of burning.

(2) Energy must be set free to cause movement. Movement—energy and heat (which is another form of energy)—are set free together.

(3) Oxygen is the gas that sets free energy.

(4) Carbon dioxide is the unwanted gas made by oxygen with part of the waste material *not* changed into energy.

(5) All living things breathe in air, from which they take oxygen.

(6) All living things breathe out carbon dioxide.

(7) Ventilators are necessary to keep a supply of pure air.

TEACHING NOTES

1. General suggestions.—As the text of this book is intended to guide and help revision of the Nature Course undertaken in the Junior School, the teacher would naturally read each chapter carefully before setting it for children, and might recall appropriate parts of their previous work by questions.

It would also be desirable to obtain as far as possible, the material mentioned in each chapter, in order to refresh the children's memory of it or to amplify their previous knowledge.

It would be contrary to the whole aim of the inclusion of Nature Study in the curriculum, if this course of reading were carried out without practical work. Observational work, accompanied by careful drawing and the taking of notes and simple experimental work, should therefore accompany, or in some cases precede, reading. The following ideas are suggestive, not exhaustive.

2. Demonstrations.—

I. TO SEE WHETHER AIR IS REALLY TAKEN IN WHEN WE BREATHE.—On the teacher's table fit up a bell jar with a tight rubber stopper pierced by one hole through which is passed a

glass tube, also fitting tightly. Place the bell jar in a trough of water, preferably of glass. Let a child place his mouth over the tube and take a deep breath.

The water will rise in the bell jar.

The teacher can mark the new level with a strip of paper.

Now let the child breathe out.

The water will fall again.

Conclusion.—Air is breathed in and out.

II. TO COMPARE BREATHED-OUT AIR WITH ORDINARY AIR.—Light a taper or candle and place a bell jar with its neck open, over it.

The light will burn for some time, then go out.

Now let the child breathe in and out of the stoppered bell jar several times, then the teacher should very quickly withdraw the stopper and insert a lighted taper. (Place a finger tip over the tube opening while withdrawing the stopper.)

The taper goes out at once.

Statement.—It looks as if there is some change in the air in the bell jar. Tell children that the gas—the only one—which allows things to burn in it has been called oxygen. There are many which will *not*



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PICTURE SUMMARY

HOW ENERGY IS USED

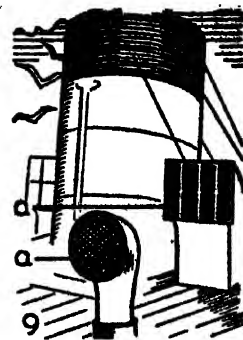
1. Movements use energy. Muscles supply it.
2. Fire uses energy. Fuel supplies it. (Note air inlet at a.)

HOW ENERGY IS OBTAINED

3. Animals obtain sun's energy stored in plants they eat.
4. Food gives energy from plants and animals.
5. Seaweeds and sea creatures form mud and rock.
6. Petroleum well. Petrol stores energy obtained from rock.

OXYGEN RELEASES ENERGY

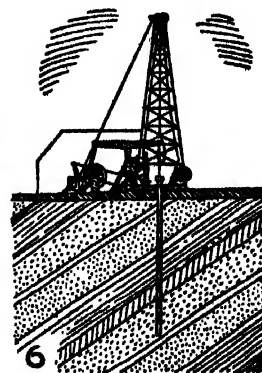
7. Air lever (a) of motor cycle.
8. Mountain climber wearing oxygen helmet.
9. The ventilators of a steamship. (a and a.)



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support burning. The particular one breathed out from our lungs is called *carbon dioxide*. We can easily make it.

III. TO MAKE CARBON DIOXIDE.—

Take a few chips of marble or a little powdered chalk, in a boiling tube or test tube, and pour a little hydrochloric acid (spirits of salts) upon it.

It will bubble strongly.

The gas coming away is carbon dioxide.

IV. TESTS FOR CARBON DIOXIDE.—

Hold a lighted taper at the mouth of the test tube.

The taper will go out.

Have a little lime water ready in a glass tumbler or beaker, and pour the bubbling gas into it, shaking the tumbler.

The lime water turns cloudy.

Statement.—Tell the children that the gas prepared in this way is *carbon dioxide*, and that its presence can always be detected by passing it into lime water, which is turned milky. We now know two of its properties:

- (1) It will not support burning.
- (2) It turns lime water milky.

V. TEST FOR THE GAS BREATHED OUT.—

The children can now check the teacher's statement that the gas breathed out is carbon dioxide, by breathing through a glass tube into a beaker containing lime water. If sufficient apparatus is available they might all try.

3. Practical work.—If there are any tame mice in the school they might be kept for a short time under a stoppered bell jar, which could then be tested for carbon dioxide by pouring lime water into it. Earthworms in a beaker might be used in the same way. Germinating peas, flower heads of dandelions, or leaves kept in the dark, might also be tested.

This would show that all these creatures breathe out carbon dioxide.

4. Exercises.—

(1) What are the two great groups into which all things on earth are divided?

(2) What four regular duties must be carried out by all living things?

(3) What is absolutely necessary before movement can take place?

(4) Make a list of all the different kinds of movements made by living things.

(5) What is *energy*?

(6) Why is it necessary to have air spaces in the grate of a fire?

(7) How is energy in the body set free?

(8) What is *oxygen*?

(9) Why do animals and men need oxygen?

(10) Why is it that oxygen can revive men who are half dead?

(11) Why is it necessary to wear an oxygen helmet when climbing great heights?

(12) What is a *ventilator*?

(13) What is *carbon dioxide*?

(14) Why is it important that a room should be ventilated?

II. ALL LIVING THINGS NEED AIR

PART 2. BREATHING

Introduction.—At first sight, the many ways in which all living things breathe, seem difficult to grasp. Fortunately, there is a wonderful order in the works of Nature and many creatures will be found to follow

a similar plan. Therefore, if the creatures of the world that breathe in the same way are put into groups, the task is made much easier.

In forming the groups it should be remembered that oxygen comes from two main supplies:

(1) From the air that is all around us.

(2) From the air that is found in all fresh running water.

Knowing this, we can form the following four groups of the different ways of breathing:

Group 1. All the larger land animals.—

These, including man and birds, are separate because of the form of their bodies. They are supported by a strong framework of bones known as a skeleton. The central part of this is the backbone which is made up of many parts called vertebrae. Thus, all creatures so made are given the general name of *vertebrates*.

Group 2. Water animals.—Some of these are also vertebrates, such as the fishes and those creatures that spend part of their lives in water—for example, the young of frogs and newts. Others, such as the water beetles and the young dragonflies, are *invertebrates*. This means that they have no bony framework. Dragonflies and water beetles are insects. Some breathe oxygen from the air, and some from the water.

Group 3. Land invertebrates.—These include such insects as butterflies, flies and beetles, and also spiders, centipedes, snails and earthworms.

Group 4. Plants.—These include trees, flowering plants, fungi, seaweeds and all such life down to bacteria, the tiniest plant of all.

Breathing should really be called *respiration*. Breathing in and breathing out are only the movements that take place at the beginning and the end. These can be felt when holding the chest with the fingers, or seen when a dog is lying on its side. Plants and most invertebrates show no movements, but all the same, they breathe. The name respiration covers everything that happens from the way in which oxygen comes in until the moment when carbon dioxide is sent out.

Group 1.—The most interesting example to be taken from this group is man, the highest (not the tallest) animal of all. Other animals, such as horses, rabbits, mice, birds and even whales (which are not fish at all) would do just as well.

No. 1 on Plate II. shows that the chief respiratory organs or parts are placed in the chest. This is a kind of air-tight box strongly guarded by the breast bone, ribs and backbone. The diaphragm is a curved floor of muscle that flattens and springs back as needed. As muscles also bind the ribs they are elastic too. Thus, movements can be made that allow the box to become now larger and now smaller.

The strong pump—the heart—and the food-pipe are also hidden within the chest, but they have been purposely left out of the picture to show the other parts more clearly. Each respiratory organ can now be studied in turn.

(a) *The wind-pipe.*—Although the knotty bulge known as the voice box is seen first in the picture, this tough tube really starts from the nose where the air enters. Now notice how, after entering the chest, it separates to the left and right and passes into the two spongy, elastic bags known as the lungs.

(b) *The lungs.*—These are fastened to the walls of the chest by a special skin. They have a crumpled appearance because the inside is a mass of tubes and air pockets which are always filling and emptying. In each lung the branch of the wind-pipe divides again and again many times, until at last, each small tube enters a group of pockets.

Many hairlike tubes through which blood flows are found in the walls of the pockets, giving them a bright red colour. As the air flows in, the oxygen passes through these walls into the blood, which carries it away all over the body. At the same time, the unwanted gas (carbon dioxide) is left behind, and in its turn, this goes back through the tubes and out into the air by way of the wind-pipe. An old name for the lungs is "lights" because, being full of air, they are so light in weight.

(c) *The diaphragm.*—If a frog is watched carefully while it is on land, it will be noticed that its throat is always throbbing. It is taking in its supply of air in gulps. Now, this does not happen with the higher animals. It

has been noted that the room inside the chest becomes larger and smaller owing to the movements of the muscles forming the floor (or diaphragm) and the walls. As the lungs are fixed to the chest wall, the air rushes into these and so fills the extra space. When the muscles go back to their ordinary position, the wall presses on the lungs and the unwanted gas is thus squeezed out. A frog has to swallow air because it has no diaphragm to pump air in and out of the lungs.

Respiration in the higher animals can be seen, therefore, to consist of:

(1) The movements of muscles which cause air to flow into special organs.

(2) An exchange of gases that takes place between the red blood and air. Oxygen is taken by the blood and carbon dioxide given in return.

Before passing to the next group one very important thing in the respiration of every creature should be noted. *The tiny organs that cause the exchange of gases must be kept moist.* They will not work when dry and stiff. With people, both warmth and moisture is given to the air by breathing through the nose.

Group 2.—Most boys and girls are fond of keeping sticklebacks, goldfish and other water creatures in a glass tank or bowl. They watch each fish regularly opening and shutting its mouth and they see its bony cheek plates rising and falling. What is it doing? Is it drinking?

It is breathing! It undoubtedly gulps mouthfuls of water but the drinking process ends there. This time there is no air supply ready to pass into the body; it must first be extracted from the water.

This means, of course, that animals which spend all their time in water must be specially fitted for the work. At the same time, it can be understood that such breathing machinery will not work at all if these creatures are brought to land.

Everybody must have seen the head of a herring. (No. 3, Plate II.) This shows one

drawn without its cheek plate so that the special breathing organs can be seen. Instead of lungs there are *gills*, which are red fringes of delicate, soft skin. Then there is a sort of bony archway to support the gills and on its inner edge, many stiff spikes like a garden rake.

The gills are full of tiny blood-vessels, for remember, *red blood is able to take up oxygen.* Water which is gulped over them passes through the rakes and out at the sides of the throat. As the blood takes the oxygen and carries it over the body, it leaves behind the unwanted gas for the water to wash away.

Most of the lesser water animals are also fitted with gills of different kinds. In sea-worms, such as the lug-worm, well-known by fishermen as "bait," they appear as tufts sticking out along the body. Crabs, fitted with little scoops, paddle the water over their gills which are placed near the tops of their legs. With shellfish such as mussels, a stream of water is drawn inside the body, over the gills and out through a kind of valve. Lastly, tadpoles change their breathing system as often as they change their way of living. Beginning with two tufts at their heads, they soon develop gills like a fish. These in turn are given up for lungs as the animal becomes a frog.

Group 3.—The insects, spiders and centipedes of this group of small land animals breathe in a manner that is quite their own. They have neither lungs nor gills but *tubes*. Along the sides of their bodies is a number of tiny pores or openings called *spiracles*. The tubes run from these and branches carry air directly to any part of the body.

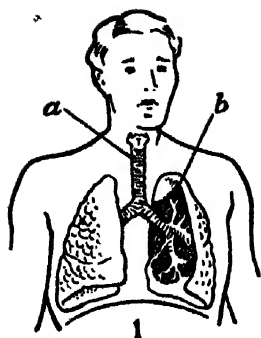
Earthworms have no special breathing organs at all. Their supply of oxygen depends upon the red blood contained in a network of blood-vessels found in the skin. This explains why worms always live in damp earth and will die when brought into the sun.

Although not in the group, it is interesting to note that the skin of a frog is clammy to

PICTURE SUMMARY

LARGER LAND ANIMALS

Man. Chief respiratory organs in chest. Wind-pipe (a) ; lungs (b).

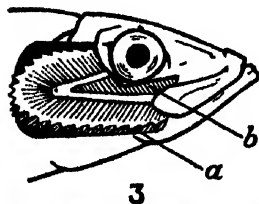


WATER ANIMALS

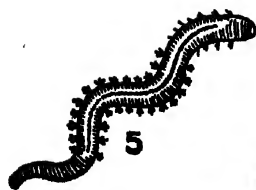
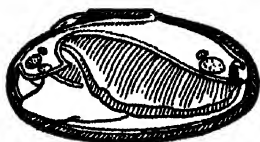
2. Frog. Develops lungs after leaving tadpole stage.
3. Head of herring. Rakes (b) ; gill rays (a).
4. Mussel. Stream of water drawn over gills. Let out of valve at other end.
5. Lug-worm. Gills take form of tufts sticking out along body.



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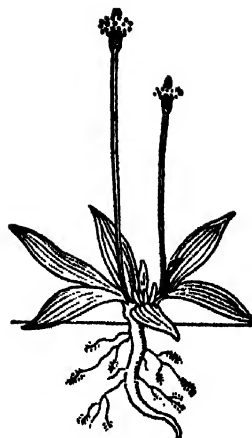
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6. A typical insect. Breathes through tubes which open into pores along sides of the body. Small drawing shows enlarged tube.
7. Centipede. Breathing apparatus of snail (m) mantle.
8. Dyticus, a water beetle. Comes to top of water to breathe.

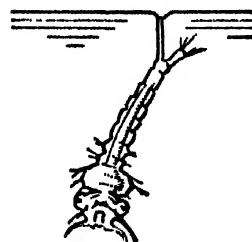
Larva of gnat. Hangs to skin of water by tube through which it breathes.

PLANTS

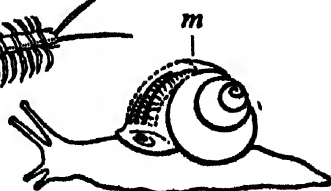
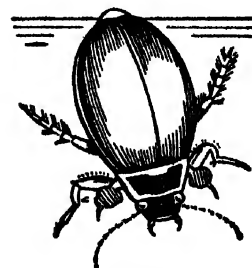
9. Stomata (pores) in a leaf. Plantain, showing small roots which would bear root-hairs.



9



8



m

the touch. The dampness is necessary because this animal also makes use of its skin to assist its lungs in respiration.

Group 4.—Special care is needed when considering the respiration of living things in this group, because green plants *use their breathing organs for three things*:

(1) obtaining oxygen; (2) obtaining part of their food; (3) giving out water vapour.

They obtain oxygen from the air both by day and night by breathing. Carbon dioxide, too, is taken from the air during the *daytime only*, while the breathing (of oxygen) is still going on. This carbon dioxide is needed to build up a special kind of food that helps the plant to make leaves and stems. This has nothing to do with breathing.

A wonderful process thus goes on when a plant breathes. It obtains energy for itself with the help of carbon dioxide, and then sets it free with the oxygen from the air by the same organs.

In breathing, the air enters the plant in two ways:

(1) Through many tiny pores known as *stomata* that are found on the surface of leaves and on green stems; and by pores called *lenticels* on the bark of trees. These act in a way that may be compared with lungs.

(2) Through the roots, especially hair-like roots which take oxygen from airspaces in the soil and give carbon dioxide in return.

Breathing cannot be seen in plants, but many experiments, especially with seeds growing in closed jars, prove that the exchange of gases takes place. The stomata

can be noticed by dipping a leaf of a buttercup in water and blowing through the stem. Many tiny air bubbles will then be seen to gather over its under surface.

Conclusion.—Besides the ones now noted, there are many other curious ways of obtaining air to suit special conditions. Thus, the baby chick forming in the egg must have an air supply in the shell. The red-breasted male stickleback, too, can often be seen fanning a stream of fresh water into the nest as he swims on guard over the eggs. In every case, however, the main idea of respiration is always the same and from the four systems studied the chief points are:

(1) Breathing is only a part of the whole process called respiration.

(2) The special organs used by all living things for breathing suit their ways of living. Thus:

(a) The back-boned animals, except fishes and tadpoles, have *lungs*.

(b) Fish and most of the lesser water animals need *gills*.

(c) Land-dwelling insects breathe through *tubes*.

(d) Green plants use *pores* leading into air spaces but can breathe through all parts, including their roots.

(3) In breathing, all the delicate organs concerned need moisture.

(4) Red blood is very important in the exchange of gases.

(5) In the land animals air passes *into* their lungs or tubes, in water animals *over* their gills.

TEACHING NOTES

1. Practical work.—

I. HUMAN RESPIRATORY ORGANS.

—Let the children stand up, placing their hands against the lower ribs with palms facing the ground and finger tips touching. Tell them to breathe deeply. They will see their hands move as the chest wall expands.

II. BREATHING IN PLANTS.—

(a) Take a buttercup leaf, immerse it in water, and blow through the stem. It will be seen that many tiny air bubbles gather over the under surface of the leaf, thus proving the presence of pores. (b) Proof that a plant breathes can be found by placing a bell jar

over a growing plant. Place the plant in a dark cupboard so that the action of taking in carbon dioxide in sunlight is stopped, since this would obscure the results of breathing.

After two or three days, test the contents of the bell jar with lime water. A milky deposit shows the presence of carbon dioxide, which has already been shown in Chapter I. to result from the breathing of animals.

2. Exercises.—

(1) From what two sources do living things obtain oxygen?

(2) What is a skeleton?

(3) Why are animals with a skeleton called *vertebrates*?

(4) What are the four main groups of the different kinds of breathing?

(5) What is the process known as *respiration*?

(6) Where are the chief respiratory organs of a man?

(7) How are these organs protected?

(8) Why is the old name of "lights" a good one for the lungs?

(9) What happens to air inside the lungs?

(10) Of what importance is the diaphragm to breathing?

(11) Draw from memory a picture of the lungs and wind-pipe of a man, and label the parts.

(12) What are *gills*?

(13) Why is it important for the gills to contain red blood-vessels?

(14) What sort of gills has a sea-worm?

(15) Write what are the three different means of breathing of a frog during its life-time.

(16) What are *spiracles*?

(17) How do spiracles enable an insect to breathe?

(18) Why do earthworms die if brought into the sun?

(19) Why are trees planted along streets in big towns?

(20) What are *stomata*?

III. FOOD IS NECESSARY TO ALL LIVING CREATURES

Introduction.—You have learnt that all kinds of movement use up energy that is stored by various parts of the body, especially in the muscles, and that the oxygen in air is needed to set this energy free. There are two chief kinds of energy released, (1) movement energy and (2) heat. The heat set free at the surface of your body during exercise gives a pleasant feeling of warmth at first, then an unpleasant feeling of being too hot if you continue for a long time, or if the exercise is violent.

You obtain all this energy from the sun, some of it directly in the form of heat and light rays, but most of it stored in your food, which at one time came from plants. For instance, beef, chicken, pork, mutton all come from animals which have fed on

plants and so have taken their store of energy from the sun through the green leaves.

The child, No. 1 in Plate III., sits in the early morning sunshine eating her breakfast. She is warmly clothed to prevent her from losing body heat, and she is receiving energy in three forms, heat and light rays from the sun, energy stored by plants and animals in her porridge and milk. She will obtain both heat and movement energy from her food.

What happens to food eaten.—Before food can be changed into energy, however, it has to become part of the body—bone, muscle, blood and so on. After being chewed and mixed with saliva it passes down the food-tube and is changed into fluid,

that is, *digested*, chiefly in the stomach and the first bend of the tube beyond it. It is then passed through the wall of the bowel and taken by the blood to all parts of the body.

No. 2 in Plate II. shows the food-tube of a rabbit. From the mouth the tube passes through the chest and diaphragm to the stomach, a thick-walled bag. Beyond this a wide bend leads into a much-coiled tube, the bowel. The liquid food is drawn through the wall of the bowel into many small blood vessels, and these lead to larger ones which pass to the heart and so send blood containing food all over the body.

No. 3 shows a bent arm. In bending the arm the muscles use up a small portion of their substance, and food is brought by the blood to take its place.

The kind of food animals need.—

1. *Foods giving immediate energy.*—Some foods are better than others for supplying energy the moment it is needed. Fat provides heat quickly, while starchy foods and sugar supply both heat and movement energy, but not quite so rapidly. For this reason our diet should include all these kinds. No. 4 on Plate III. shows some of the foods that give energy quickly. Potatoes and bread contain starch, milk contains both sugar and fat, butter gives fat. Dripping, olive and nut oils, and cod liver oil, are also useful foods supplying heat.

2. *Body building foods.*—There are other foods which are not changed into free energy so readily, but they build up our bodies and especially help growth. The chief of these are meat, fish, eggs, milk and cheese, nuts, peas and beans. Those obtained from animal sources are more digestible, especially white meat and fish, lightly boiled or raw eggs and milk. Look at No. 5 for some of these foods supplied by animals, and No. 6 for those obtained from plants.

3. *Protective foods.*—Lastly, certain foods keep us healthy and help us to resist diseases. These can be called "protective foods." Most of these foods are of special value when

taken raw. The chief ones are milk, butter, eggs, cod liver oil, fresh fruit and vegetables—especially tomatoes, oranges, lemons, grapes, lettuce and cabbage. Some of them are shown in No. 7.

4. *Mixed diet.*—You will understand now why you should have a mixed diet, containing a little of each kind of food, energy-giving, body-building and protective. Children particularly need plenty of fat from butter, milk, fat of bacon and meat, cod liver oil, and plenty of fresh fruit, green vegetables and potatoes.

The kind of food plants need.—Plants live a less energetic life than animals, so they do not lose movement energy and heat to the same extent. Nevertheless they require food for growth and for certain activities. As they have no mouths or digestive tubes they cannot take in solid food; it must be in the form of either liquid or gas.

1. *Liquid food.*—Most plants have roots which take in liquid food. They penetrate the soil in search of water. Only the young roots which have thin walls can take it in. To help in their task they have delicate outgrowths called root-hairs just above the tip. You can see these by growing mustard on damp sawdust, keeping it only just damp after the seeds have sprouted, when there will be a thick growth of root-hairs, like fine white fluff. It is these that absorb water.

2. *Dissolved food.*—Soil consists of particles of rock which have been worn and washed or blown away by frost, rain and wind. Mixed with these particles are decayed roots, leaves and stems, forming a soft brown substance called *leaf mould* or *humus*. In addition, the droppings and dead bodies of animals decay and form part of the soil.

In gardens and cultivated fields farmyard manure, lime and other things are mixed with the soil for the special purpose of providing plant food.

A certain amount of all these things, minerals from the rock particles, as well as plant and animal remains, can be dissolved



PICTURE SUMMARY

FOOD AND ENERGY

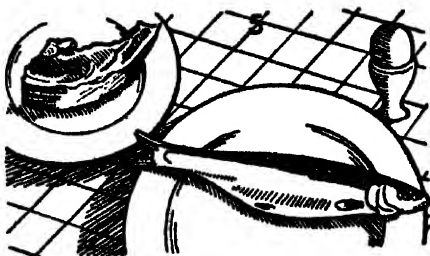
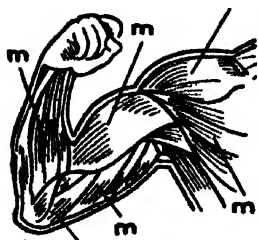
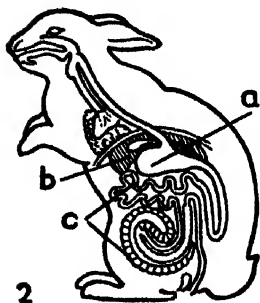
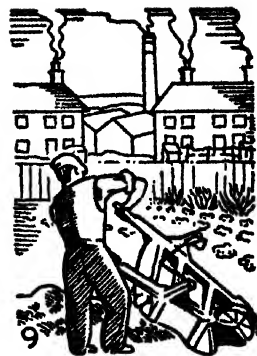
1. Food and sunlight give energy.
2. Food-tube of rabbit. Note stomach (a), liver (b), bowel (c).
3. Contracted muscle in bent arm. Energy has been used.

KIND OF FOOD WE NEED

4. Foods which supply energy for immediate use.
5. Body-building foods from animals.
6. Body-building foods from plants.
7. Protective foods.

KIND OF FOOD PLANTS NEED

8. Foods dissolved in water come from rocks, decaying leaves and animal matter.
9. Manure in barrow. Carbon dioxide in air comes from burning, breathing and decay.



in the soil water as it trickles through. In this form the root-hairs of plants can absorb the substances and the plants can make use of them as food.

The mineral substances taken in by plants are also needed by animals to make bones and blood. We obtain them chiefly from fruits and green vegetables.

No. 8 shows some sources of plant food—a rock washed by a stream, a horse which may drop manure, a heap of decaying leaves. In No. 9 a man empties a barrow of farm manure which he will spread on the land.

3. *Food from the air.*—Lastly, green plants can take the gas carbon dioxide from air and use it to build up their bodies. It seems impossible that leaves can make solid substances out of gas and water, but they really do so.

The carbon in carbon dioxide is the same substance as coal, and when coal, wood or any other substance is burnt, this gas is formed. It is also formed when any kind of decay takes place, and it is breathed into the air by animals.

In No. 9 you can see several things which are making carbon dioxide and passing it into the air. The house fires and factory furnaces send it up their chimneys with the smoke. The heap of decaying manure is also making it, and the man is breathing it out.

Conclusion.—You will now realise the following important points about food:

(1) It is needed by all living creatures to provide heat and movement energy, and to build up their bodies by growth.

(2) Foods which supply animals with immediate energy are starch, sugar and fats.

(3) Foods which build up the body, called *proteins*, are contained in milk and cheese, meat and fish, nuts, peas and beans. The most easily digested come from animals.

(4) Protective foods which help the body to grow and remain healthy, and prevent disease, are fresh fruits and vegetables, milk, butter, eggs, and cod liver oil.

(5) It follows that a *mixed diet* is needed to give us all we require.

(6) In the food-tube of an animal, and in ourselves, food is prepared by being broken up and dissolved, and is then passed through the wall of the bowel into the blood, which carries it wherever it is needed to build up the body and supply energy.

(7) The food of plants is:

(a) Water taken in by the root-hairs, containing dissolved mineral substances from rocks, and decayed plant and animal material.

(b) The gas carbon dioxide taken from the air. This enters the leaves by the *stomata*, or pores.

TEACHING NOTES

1. Practical work.—

I. MAKING LISTS. — Encourage the children to look in shop windows and to note down all the foods they can see, then, in class, make lists under the headings suggested in the chapter. Some foods will come under more than one heading. Note the large number of tinned foods displayed, and discuss their advantages and disadvantages. Discuss cost and make a chart of foods which are both cheap and nutritious.

II. DIGESTION.—Action of saliva. If each child chews a small piece of unsweetened

biscuit; e.g., cracknel, he can taste it becoming sweet, that is, some of the starch of which it is formed is being changed to sugar. The importance of mastication in preparing the food for the main process of digestion should be emphasised. The iodine test (blue coloration) for starch may be shewn and samples of foods tested with it.

III. PLANT GROWTH.—Grow mustard and cress, linseed or wheat on flannel, keeping rather dry, and note the luxurious growth of root-hairs.

2. Exercises.—

(1) What are the two kinds of energy released by our bodies?

(2) What is the original source of all energy used by plants and animals?

(3) What kinds of energy would you receive if you sat in the sunshine eating a breakfast of porridge and milk?

(4) What must happen to food before it can be turned into energy?

(5) What do you understand by the word *digested*?

(6) Draw from memory a diagram to show what happens to food after it has been swallowed.

(7) What happens when you bend your arm?

(8) Name some foods which give energy quickly.

(9) Name some body-building foods.

(10) Name some protective foods.

(11) Why would a diet consisting of meat, fish, potatoes, bread, cheese, nuts and water, be insufficient for healthy growth?

(12) In what two forms can plants take in food?

(13) How do plants obtain food from the soil?

(14) What is *humus*?

(15) For what purposes do animals need the mineral substances taken in by plants from the soil?

(16) How do animals obtain this mineral substance?

(17) From what sources does carbon dioxide come?

IV. NO LIVING THING CAN DO WITHOUT WATER

Introduction.—If you have ever kept birds, or other pets, you know that you must never forget to give them water. The birds in the garden come to drink the water you place on the lawn for them. It is said that birds peck fruit, largely for the water they contain. You know, too, that if plants are not watered, they will die. No. 1 Plate IV. shows you the difference between a plant that has been well-watered and one that has been left unwatered. The first is strong and upright, while the second is limp and the leaves are wrinkled and drooping.

Some animals may drink seldom, but can obtain enough water from the plants they eat. Possibly wild rabbits drink no water, though tame ones should always have it available. It is true to say, then, that all living things, whether plant or animal, need water.

Water and growth.—No growth is possible without water, for the tissues of both plants and animals must be distended, or

filled out by it, so that the new substances obtained from food can be deposited and become part of the body. If you look at No. 1 again you will see how well filled out the first plant looks. A very large amount of the bodies of plants and animals is water. Besides filling out the tissues it makes the blood of animals and the sap of plants.

Water and cleanliness.—In the case of animals, water is not only needed to distend the body but also to flush and cleanse it inside. To keep the body clean and working properly it is important to drink plenty of water. If you keep a dog, notice how frequently he drinks. It is a good plan to drink plenty of cold water yourself, but it should be between meals. Little, if any, should be taken with food.

Water is not only used for cleansing the body inside, but very many animals like to bathe in it and so keep their skin and fur clean, and there is no doubt that this helps to keep them healthy. Your dog will rush

joyously into a river or the sea and splash about there, and you must have seen the birds in the garden splashing the water over their feathers as they are doing in No. 2 of the Plate. Horses and elephants enjoy a bathe as much as boys and girls do.

Primitive creatures and water.—Many of the lower animals and plants depend entirely upon water to give them everything they need—food and drink, support and transport. Life first began in water, and the earliest creatures either lived in the mud or floated in the water. We still look for the lowliest forms of life in water. As examples, in No. 3 of the Plate you will see a jelly-fish floating at the surface in the shallow sea water near the shore, and a seaweed rooted on the rock at the bottom, its thin fronds spread out and buoyed up by the water. If you took either of these creatures out of the water, it would become limp and flabby, and very soon die. They rely on the water to support them. It soaks through them and carries their food. They also obtain oxygen which is dissolved in the water, for as we have seen already, every living thing must breathe.

Plankton.—At the surface of the sea there is a kind of scum of small living creatures, floating from place to place with the currents. Though some of the small animals can swim, they are too minute and frail to be able to go far by themselves, and they are at the mercy of the wind and waves. The advantage of this life is that they receive plenty of sunlight and fresh air, as well as any food that is going. Many of them are the eggs and young stages of plants and animals which later will settle down in other places. This scum is given the name of *plankton*.

In No. 4 of the Plate two dwellers in the plankton are shown. The first is so minute that you could not see one at all without a microscope. Its name "noctiluca," means a night light, because millions of these little

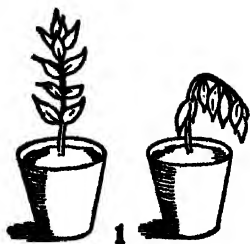
creatures floating on the sea at night will make the crests of the waves shine brilliantly with a bluish-white light. We call this *phosphorescence*. The second creature is a mere speck, but just visible. It is the young stage, or zoea larva, of a crab. It is rather like a tiny shrimp with long spines, which may act as floats or may prevent fish from eating it.

Creatures which have returned to water.—Some animals and plants, apparently finding too much competition in a life on land, have returned to live in water again. These creatures had become fitted for land life, so their structure has had to be altered again for life in water. This has happened in the case of quite a large number of water plants and insects.

No. 5 shows a water lily. This might be said to have gone half-way back to the water, for its roots are submerged in the mud, but its leaves and flowers float at the surface. Its fruits are ripened below the water, for when the flower has been pollinated it closes and the stalk draws it down. One of the chief difficulties is to obtain enough air in water. If you could cut through the stalk of a water lily you would see that it contains large air spaces to store as much as possible.

No. 6 shows the young stage of an insect which lives in water, though the parent flies in the air. It is the larva of the *chamæleon fly*, a large black and yellow fly which you may see in the garden feeding on the nectar of flowers. The larva has a most interesting way of obtaining air. Like a gnat larva, it can hang head downwards from the surface film of the water. It has a delicate circlet of hairs at the hind end, which it presses against the surface, then draws them slightly back, making a shallow basin into which open the breathing pores at the tip of the tail. These are able to suck in the necessary air for breathing.

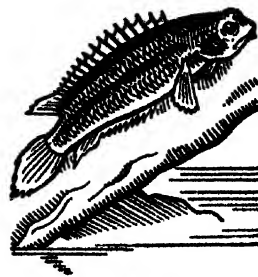
Storage of water.—Some animals and plants can exist for a long time without



PICTURE SUMMARY

WATER AND GROWTH

1. Well-watered plant and un-watered plant.



9

WATER AND CLEANLINESS

2. Birds using bird bath.



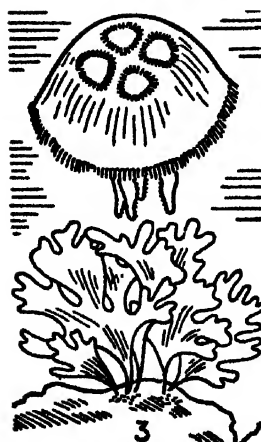
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CREATURES LIVING IN WATER

3. Floating jelly-fish and submerged seaweed.
4. Animals of plankton. Noctiluca and zoea larva of crab.
5. Water lily floats on water, but has roots in mud.
6. Larva of chamæleon fly comes up to breathe.



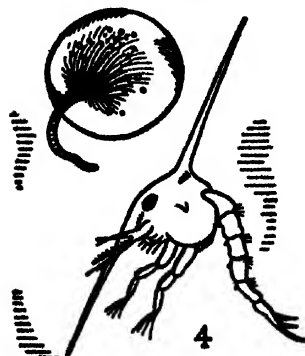
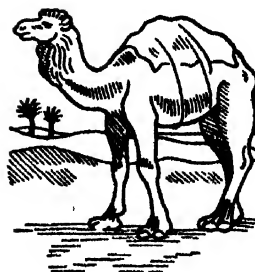
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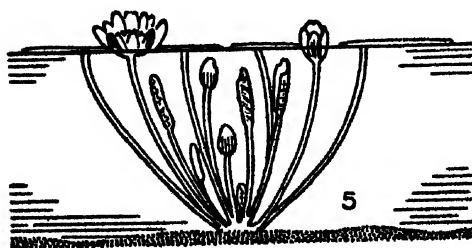
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STORAGE OF WATER BY PLANTS AND ANIMALS

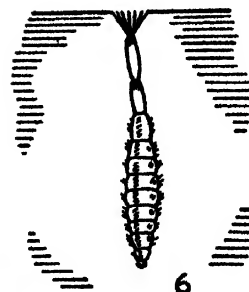
7. Camel stores water in its stomach.
8. Cactus stores water in its thick stem.
9. Climbing perch stores water in its head.



4



5



6

taking in water. In these cases there is usually some way of storing it. No. 7 shows a camel which must travel for days across the desert without coming to a drinking place. The stomach of a camel is provided with a great many small pouches in which water can be stored in sufficient quantity to last many days.

No. 8 shows a common desert plant, a cactus. These peculiar plants have their leaves reduced to small spines, so that very little water is lost at the surface. The plant contains a substance called "mucus" which can absorb and store water during the short rainy season, to last until the rains come again. Our last illustration shows a climbing perch. This little fish of the Indian Ocean leaves the water at times and wanders over the land, even climbing trees. Like all fish, however, it can breathe only oxygen dissolved in water, so some of the bones in the side of the head have grown into plates,

covered with delicate skin, which can hold water for a considerable time while the fish is roaming on land.

Conclusion.—We have now seen that water is important because:

- (1) It fills the body tissues and distends them, allowing growth to take place.
- (2) It is the basis of blood and sap.
- (3) It cleanses animals, inside and out.
- (4) Many of the lower animals and plants live in it entirely; it supports them and transports them, and they breathe in it.
- (5) We have noticed that some creatures have gone back to the water after trying to live on land. Finally, we have noticed that water is so important that animals and plants in countries where it is scarce have special means of storing it. We can now understand what is meant by the saying, "Water is life."

TEACHING NOTES

1. Demonstrations.—

WEIGHING.—(a) If a good balance is available, weigh various plant tissues; e.g., succulent stems with leaves, woody twigs, fruits, seeds, flowers, then dry slowly over gentle heat until as much water as possible has been removed. Then weigh again and let the children calculate the proportion of water to solid substance. Actually there will probably be more than is shown by this rough method, but it gives some idea of the amount of water in plant tissues.

(b) Do the same with small quantities of meat and fish, and an egg broken in to a small dish to weigh, the whole being weighed before and after drying.

Note in all cases, also, the changes in appearance, showing how much water has to do with the "plumping out" of tissues and so with the shape of the whole.

2. Exercises.—

(1) Why is growth not possible without water?

(2) Give three purposes for which water is necessary to plants and animals.

(3) Why is it important to drink plenty of water?

(4) Where do we find the lowliest forms of life?

(5) In what ways does a jelly-fish depend upon water?

(6) What is *plankton*?

(7) What is *phosphorescence*, and how may it be caused?

(8) In what ways is the water lily a curious plant?

(9) How does the *chamæleon* fly larva obtain oxygen?

(10) How is it that a camel can travel for days in a desert without water?

(11) How do cactuses in dry deserts keep alive?

(12) Why is it necessary for a climbing perch to store water in its head? In what country are climbing perch found?

V. GETTING RID OF RUBBISH

Introduction.—When we speak of rubbish we mean something we do not want, or that is of no use. Yet in nature nothing is really useless, for what one creature has finished with another will use. Amongst people many things are thrown into dust-bins or on to refuse heaps to decay, or else they are burnt. In either case, they are attacked by oxygen, which changes them into something else, and in the long run, some plant or animal uses them again. A good deal of carbon dioxide results from burning or decay, and this is used by plants, as we have seen.

Plants which destroy waste matter.—All animals produce waste substances, both as indigestible food matter and when energy is set free. This waste matter must be removed, or it would cause poisoning of the system. If this excrement is put on the soil, plants can make use of it, but before this can happen, it must be changed into a much simpler form.

This is where some very peculiar plants play their part. Everyone has seen mould growing on stale bread or jam. There are many kinds of moulds. No. 1, Plate V. shows a common mould like white fluff, which you can grow for yourself by damping a piece of bread, placing it in a saucer with a tumbler over it, and keeping a little water in the saucer.

If you look carefully at a heap of dead leaves or animal manure, you are sure to find fine white threads of mould and perhaps tiny black or white knobs here and there. These moulds are the first line of attack. The threads penetrate the waste substance, feed upon it, and in so doing, break it down.

The moulds belong to a large group of plants which obtain their food in this way. They have no green colour, so they are

unable to obtain carbon dioxide from the air as green plants do, and this is the way they have found instead. The plant is composed of white threads, chiefly hidden in the food substance, and it is only when these have sucked nourishment from the rubbish heap or other decaying remains that they produce the "fruits" which make us notice them.

In No. 2 of the Plate you see the "fruit" of a mushroom, attached to some of the white threads from which it has grown. The whole group of plants to which the mushroom, toadstools and moulds belong, is called the *fungi*. Some of them live on living creatures.

Bacteria.—When the moulds have played their part in breaking down waste animal or plant matter, another group of plants comes into play. These are the very minute, colourless plants called *bacteria*. No. 3 shows you some of the forms they take, but gives you no idea of their size. They are so tiny that hundreds could lie on the point of a needle, and it is only with a very good microscope that they can be seen. Many of them make their presence—not felt—but *smell*. Whenever you smell sour milk or putrid meat, it is the work of bacteria, and as you probably know, a small number of kinds cause diseases. However, those that dwell in the soil, with few exceptions, are harmless, and perform a good work for the rest of creation, for while they are feeding on waste matter, they are at the same time making it possible for plants to use what is left. They are breaking down, or decomposing, waste substances. Many of them can move about by wriggling.

Sewage farms.—You probably know that all the waste matter that goes down the drains in towns is called sewage, and that it is carried away to some place outside the

town, where it is allowed to spread out over a system of large gravel beds. Here bacteria set to work to decompose the sewage, just as soil bacteria deal with the small quantity of waste matter spread over a garden. In this way the sewage, which might cause infectious disease by breeding harmful bacteria, is made harmless and even used for the cultivation of plants, for the purified substance is led away by channels to fields where cabbages and other crops are grown. All smell is also taken away when the bacteria have completed their work. It is a great service which the sewage bacteria perform for mankind.

Animals which destroy waste matter.—

Many animals feed on waste matter. Perhaps the most noticeable are the various flies which lay their eggs and feed in rubbish heaps. In uncivilised communities they may perform a service by reducing the amount of decaying substance, but unfortunately, they are likely at the same time to pick up disease bacteria which they carry about on their feet and bodies, and as they do not confine their attention to rubbish, but will feast on our food if they can, they are a great source of danger. It is, therefore, very important that nothing shall be left for them to breed in or feed on, and that all food shall be kept covered. No. 4 shows the foot of a house fly, which is both hairy and sticky. Rats are also a public danger for a similar reason. They feed amongst rubbish heaps, and travel far and wide carrying disease germs which may cause serious epidemics.

No. 8 shows a burying-beetle. When one of these beetles finds the body of a small animal such as a field mouse, it digs away the soil from under it, so that it sinks into the ground. When it is completely hidden the beetle lays its eggs in the carcase, where they hatch and the grubs feed. Another beetle, the scarab, will collect sheep's dung, make a ball of it, dig away the soil under it to bury it and then getting inside the ball, feast on the dung; or it will prepare a pear-

shaped mass, bury it in the same way, and lay an egg in the narrow end. The grub then feeds inside the mass.

Animals which fed on dead flesh may be regarded as useful in hot countries, unless there is danger of their spreading disease. Vultures, jackals and hyenas, though repulsive creatures, clear away a great deal of decaying flesh which would quickly become very unpleasant. Vultures hover near dying animals, and jackals dance attendance on larger animals such as lions to seize anything they may leave after a kill.

We call all these animals *scavengers*.

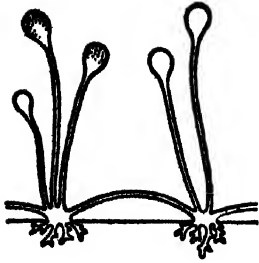
Waste matter in plants.—Plants do not get rid of rubbish in the same way as animals. In the first place, they are much less energetic, therefore much less waste results, and there is none from undigested food since they do not digest food. In the second place, it is not so necessary to get rid of waste as they do not move about. Animals would become too bulky to move if they had to carry waste matter about with them.

Yet plants might be poisoned by waste matter if it remained in the sap, so they dispose of it in various ways. Some of it may be stored in the leaves, which are shed in the autumn. Sometimes it is in the form of bitter substances which prevent animals from eating leaves and stems. In the case of trees it is usually stored in the oldest part of the wood, at the centre of the trunk and branches. Waste substance blocks the wood and make it hard and dark in colour, as shown in the oak in No. 9 of the Plate. It is also stored in the bark which is used for tanning leather.

Conclusion.—

(1) In nature nothing is wasted. Animal and plant remains are used again as food.

(2) Moulds and other fungi and bacteria, break down these remains until at last green plants can use them.



1

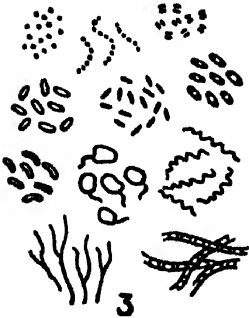
PICTURE SUMMARY

PLANTS WHICH DESTROY RUBBISH

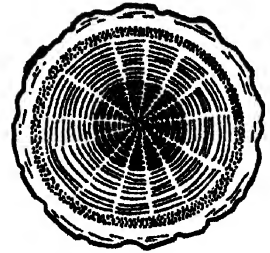
1. Pin mould which will grow on bread, etc.
2. Mushroom. Grows on manure.
3. Various forms of bacteria. Some live in soil preparing food for green plants.



2



3



9

ANIMALS WHICH DESTROY RUBBISH

4. House fly. Hairy foot of fly (enlarged).
5. Rat, found in all countries.
6. Vulture, tropical bird scavenger.
7. Hyena, tropical mammal scavenger.
8. Burying - beetle, which buries small dead animals.



8



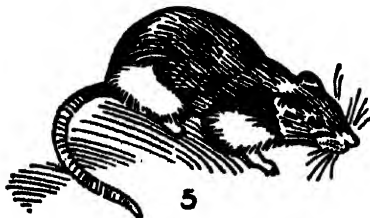
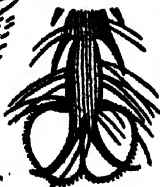
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HOW PLANTS DEAL WITH THEIR WASTE MATTER

9. Trunk of oak cut through to show heart wood, (dark central part).



4



5



6

(3) Man uses the help of bacteria in disposing of sewage.

(4) Animal scavengers are useful in devouring rubbish which would decay, but may cause harm by spreading disease bacteria.

It is best to destroy things by burning or by means of sewage farms, and to keep down flies, rats and other scavengers or *carion feeders* as much as possible.

TEACHING NOTES

1. Practical work.—

I. CULTIVATION OF MOULDS.—See how many different moulds can be grown, or found growing. If a piece of bread is soaked and kept under a tumbler in a warm place, with a little water in the dish, it is usual to obtain a succession of moulds. Cut lemon, tomato, a little manure from a heap, will also produce good results. Warmth and a close atmosphere are needed.

II. TESTING FOR BACTERIA.—A variety of protein substances may be placed in a warm place in test-tubes, to illustrate the activity of bacteria in causing decay or putrefaction. The *smell* proclaims their presence though they cannot be seen. A little milk and broth will illustrate the point. Some bacteria liquefy gelatine. This can be illustrated by making a jelly of the substances used.

2. Exercises.—

(1) Why is it necessary for animals to get rid of waste matter?

(2) What is *mould*?

(3) How can you detect the presence of mould?

(4) What is the name given to the group of plants to which moulds, mushrooms and toadstools belong?

(5) What are *bacteria*?

(6) In what way are bacteria and moulds useful to ordinary green plants?

(7) Why is it important never to leave food uncovered?

(8) What is a sewage farm?

(9) What happens to waste matter at a sewage farm?

(10) How is the burying beetle a useful little creature?

(11) How is a jackal a useful animal?

(12) What is a *scavenger*?

(13). Make a list of animal and bird scavengers.

(14) Why have plants less waste matter than animals?

(15) How do plants get rid of waste matter?

VI. HOW GREEN PLANTS OBTAIN A LIVING

Introduction.—We know that green plants breathe and take in food and water through the leaves and roots, and particularly through the pores or stomata and root-hairs. But it must not therefore be imagined that these parts work by themselves or

that they are more important than the rest of the plant.

Activity of the whole plant.—The whole plant works as one being, all parts taking their share together. In No. 1, Plate VI.

is shown an oak tree, the roots of which are widely spread both to anchor it firmly and to reach a large supply of water. The root-hairs take in water, the veins in the roots, trunk and branches suck it up till it reaches the veins in the leaves, then it spreads through the leaves and passes out of the stomata as water vapour. In this way a current of water is constantly kept flowing.

The branches and the leaf stalks spread out the leaves so that they are exposed to sun and air and can carry out their work. No. 2 represents a spray of sycamore leaves, showing that they do not overlap but each receives full sunshine. This is called a *leaf mosaic*.

It is important for most plants to have as many leaves as they can support, so as to get as much sunshine, carbon dioxide and oxygen as possible.

Root systems.—There are two chief arrangements of roots. There may be one long main root, with small side roots or *lateral* roots growing from it. The main root is called a *tap root*. No. 3 shows the tap root of the dandelion, reaching deep into the soil. The second type is shown in No. 4, the strawberry. Fine roots grow from the base of the stem, usually not going very deep, but spreading out just below the surface. These are called *fibrous roots*. You will find them in plants which send out runners and form new plants from buds; for instance violets and grasses.

The influence of soils.—In considering how plants obtain their living we must not overlook the importance of the soil. Some plants like a damp soil, others a rather dry soil; some like it to be rich in manure, others prefer a poorer quality. Roses, for instance, like a rich soil and a good deal of water; nasturtiums prefer rather poor soil and not very much water. Some plants cannot bear lime or chalk in the soil and are said to be *lime shy*. Rhododendrons and the sweet chestnut, shown in No. 5, are lime shy, while the deadly nightshade lives on chalky soil only.

Sun and shade.—Although all green plants must have a certain amount of sunshine, by no means all of them like the full glare of the sun. Some of them take shelter in woods, under the trees, or in ditches where the bank and hedge give them shade. Usually these plants have large, thin leaves which would quickly dry up if exposed to hot, dry air. Others, on the other hand, like an exposed, sunny position. No. 7 shows the common heather or ling, which grows on open moorlands. Its leaves are very small, and curled so that the under surface, which contains most of the stomata, is protected to prevent loss of water.

Water supply.—The amount of water which plants receive must naturally affect their livelihood. We know how quickly fields and gardens show the effect of too little water. Plants which get plenty of rain, or grow where they receive much water from the surrounding drainage of hillsides, are luxuriant, while the same kind in dry situations will be stunted and poor. The vegetation of large stretches of country may depend upon the amount of rain which falls. When there is good soil, and plentiful rainfall, there will be forests, but with good soil and just a little less rain, there will be grassland, that is, prairie or steppe. You can see this from the rainfall and vegetation maps in your geography books.

Competition between plants.—We know that people struggle and compete for the things they want. To a certain extent it can be said that plants do the same. You plant your garden with choice plants and weeds immediately begin to grow there too. They send their roots in between the garden plants, and take their food and water, and they push and crowd out your little seedlings and interfere with their air supply. The same sort of thing is happening everywhere. Some plants are rosette shaped, and press their leaves against the soil so that no others can grow under them. Dandelions, daisies and plantains are good examples of

this. But plants with runners and long, narrow leaves like the grasses, can worm their way between other plants and so gain a foothold just as successfully.

In some cases, closely related plants fight for the same situation. A well-known example is the pretty pale yellow oxlip, a first cousin of the primrose, which in north Essex has driven out the primrose completely from some of the woodland glades.

Co-operation.—Now, human beings have discovered that it is not always necessary to fight for a living and to look on everyone else as an enemy, but that "give and take" is possible, or *co-operation*, which means working together to help one another. You would hardly expect plants to have found this out, yet it does seem to happen that instead of struggling for existence, some plants work together. No. 9 shows a cutting through the soil in a bluebell wood, where bracken and soft grass also grow. You will notice that the roots of the three kinds of plants are at different levels, and so they can all live on one piece of soil, yet take their water and food supply without interfering with one another. In a similar way, the plants of a hedge bear their leaves and flowers at different heights, while the different times of flowering probably help to make it possible for more of them to receive the attention of insects and so bear fruit.

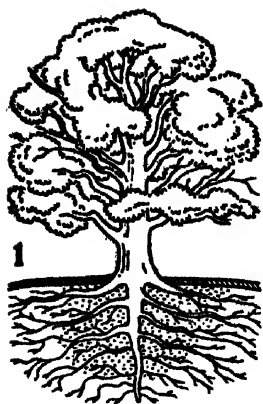
Plants and animals.—This brings us to consider the important part played by animals in the lives of plants, for we should have a very one-sided view of how a plant obtains a living if we ignored this. We have already noted that the remains and waste matter of animals, including the gas they breathe out, provide plants with food. In certain

other ways plants depend on animals. Perhaps the most important is the relation between flowers and insects. Flowers must have winged insects—especially bees and butterflies—to carry pollen from one to another. Without the winged insects we should have practically none of the edible fruits and very few vegetables, and the kind of plants on the earth would be very different, for flowering plants and insects have come into existence side by side, each depending on the other. We should also notice that many animals, especially birds, assist in the dispersal of seeds.

Some plants are protected against being eaten by animals by having thorns and prickles, or poisonous or distasteful leaves which the animals learn to avoid. It is advisable never to eat leaves of plants belonging to the parsley and buttercup families, for instance, unless you are quite sure they are harmless, for many are poisonous, including the buttercups themselves.

Conclusion.—The important points to remember from this chapter are:

- (1) That the whole of a plant is active in carrying on the work by which it lives.
- (2) There are two main types of roots, tap roots; e.g., dandelion; and fibrous roots; e.g., grasses, seeking water deep down and near the surface, respectively.
- (3) The nature of the soil, and the amount of water supply, are important influences in the life of a plant.
- (4) Both competition and co-operation take place amongst plants.
- (5) Animals help plants, especially in pollination and seed dispersal.
- (6) Some plants are provided with protection against animals which would eat them.



PICTURE SUMMARY

ACTIVITY OF WHOLE PLANT

1. Oak tree, showing spreading branches and roots.
2. Leaf mosaic of sycamore. (No leaves overlap.)

ROOT SYSTEMS

3. Tap root of dandelion penetrates deeply.
4. Shallow fibrous roots of strawberry.

INFLUENCE OF SOILS

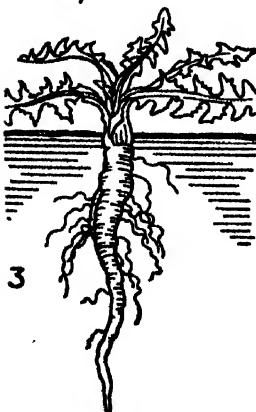
5. Sweet chestnut is lime shy.
6. Deadly nightshade likes chalky soil.

SUN AND SHADE

7. Heather has small, rolled leaves.

COMPETITION AND CO-OPERATION

8. Oxlip and primrose are cousins and competitors.
9. Bluebell, bracken and soft grass grow together.



TEACHING NOTES

1. Practical work.—

I. ACTIVITY OF THE WHOLE PLANT.—Revise from actual specimens the parts of a plant, connecting them with its activities, making sketches and labelling them to explain how they are used.

II. Try to collect plants illustrating the different types of growth considered in this chapter.

III. Let the children each take up one point in the chapter, and see what material they can find in their own neighbourhood to illustrate it, working up a careful independent study.

2. Exercises.—

(1) How is a current of water kept flowing in a tree?

(2) What is a *leaf mosaic*?

(3) Why is it important for a green plant to have many leaves?

(4) What do you understand by the term *tap root*?

(5) What do you understand by the term *fibrous root*?

(6) Draw a picture of a dandelion root and a strawberry root, marking clearly the difference between them.

(7) What sort of soil does each of the following plants like best: roses, nasturtiums, sweet chestnuts, deadly nightshade?

(8) Why must plants with large thin leaves grow in the shade?

(9) Of what use to the heather plant is a small, curled leaf?

(10) How can you account for the fact that some regions are densely forested, while others are not?

(11) How does the daisy prevent weeds from growing close to it?

(12) What does *co-operation* mean?

(13) What is the value of hedge plants bearing their leaves and flowers at different heights?

(14) Draw a picture to show why it is possible for bluebells, bracken and soft grass to grow all together.

(15) Of what use to some plants are prickles?

VII. THE SEARCH FOR FOOD BY ANIMALS

PART I. CARNIVORES AND INSECTIVORES

Introduction.—The search for food takes up a great part of the time of wild animals. Animals fall into three main groups with regard to food. Those which feed on plants are called *herbivores*; those which feed on animals we call *carnivores*, from two Latin words meaning "flesh devourer," while the animals which eat mainly insects are called *insectivores*.

Carnivores.—

I. *Weapons and tools.*—Most flesh eaters are provided with some sort of weapon for

catching their prey, and some sort of tool for eating it. No. 1 in the Plate shows the weapons of a cat—its sharp claws. As the cat springs, the claws protrude and are forced into the flesh of its victim. Lions and tigers kill by tearing and mauling the flesh, using both teeth and claws. The cheek teeth or molars of all carnivores are provided with several sharp prongs or cusps, while the eye teeth or canine teeth at the front are large and sharply pointed. They serve as knives and forks with which the food is torn to shreds.

No. 2 shows the canine teeth and molar teeth of a dog. They are both weapons and tools, for a dog catches its prey with its strong jaws. Wolves and jackals also do this.

Carnivorous birds have a similar provision for catching their prey in the strong, curved beak and claws. In No. 3 the beak and foot of a hawk are shown. As the hawk pounces from a great height, its claws grasp its victim, and it then kills with one blow of its dagger-like beak.

Cats keep their weapons sharp and always ready for use. You must have seen a cat sharpening its claws against a tree. Sheaths protect the claws when not in use. You can see a claw and its sheath in No. 1.

Yet another animal with similar weapons to the cat, dog and bird of prey is the crocodile. Here again the powerful jaws, capable of closing in a grip which can snap off a limb, are furnished with strong, cusped teeth. In this case the tail also is a powerful weapon. No. 4 shows the formidable jaws and teeth of a crocodile.

There is a similarity, too, between the beaks of birds of prey and the great claws of crabs. No. 5 shows the pincers of a hermit crab. When these close on a victim it is very difficult to loosen the grip.

Notice that in all cases it is not merely the weapon itself that is important, but the powerful muscles which work it, giving strength to a blow, and force to a grip. These muscles in turn must be firmly attached to the bones of the jaws and skull, or in the case of the crabs, to the horny plates which encase the body, for without a firm attachment to work from, teeth and claws would be powerless.

This fixed place is called a *fulcrum*. The same principle is seen here as in a pair of tongs or nutcrackers. The free end grips, but the pressure or force is applied between it and the fixed end, and to apply this force, energy is used. So we see yet another type of movement and another use for energy.

2. *Form and food*.—The whole shape and structure of an animal may be important in helping it to obtain food. We realise the need for swiftness in catching a victim. A small head, long slim body, and slender legs, enable an animal to run fast, pounce quickly, climb noiselessly, and so catch its prey unawares. In No. 6, which shows a

leopard climbing a tree, these features can be seen.

3. *Senses*.—It is also important that the carnivorous animal shall have very keen sight, smell and hearing. Probably most animals depend chiefly on their sense of smell to locate their victims in the first place, and it is only when they arrive at close quarters that hearing and then sight come into play, but all are important. Birds of prey, however, seem to depend chiefly on their acute sight.

4. *Habits and food*.—All the cat tribe show cunning and patience when hunting, know how to take cover and lurk out of sight, and keep very quiet. The leopard in No. 6 has all these qualities. The dog tribe (with the exception of the fox and jackal) hunt more in the open, rely upon speed to run down their victims, and have the curious habit of combining and hunting in packs. Amongst wolves there is a recognised leader, and the pack, directed by him, will surround their prey and cut off all way of escape. Amongst the dog tribe high intelligence is shown in their hunting, and this has been used by man in training them either to hunt for his ends, or to guard his flocks. The sheep dog shows wolf tactics in driving a flock of sheep, only his ferocity and desire to kill have been curbed by taming.

5. *Lurking tactics*.—A great many animals hide in ambush and wait for their victims, or stalk them stealthily till they are within reach. The habit is not confined to the higher animals. It is often seen amongst the creatures in ponds, where the tangle of water weeds affords plenty of cover. No. 7 shows one example, the larva of the great water beetle. This larva hangs head downwards waiting for its prey, with its pincerlike jaws wide open, ready to snap some unwary tadpole or worm.

Insectivores.—The largest number of insect feeders is found amongst birds. Many of those we welcome in our gardens do us a great service by feeding upon insect pests, including wireworms and leather jackets. Amongst mammals, the hedgehogs and shrews are useful.

The insectivorous birds, like the blackbird, have sharp beaks like fine pincers, while the small mammals have needlelike teeth which act in the same way, picking up even the smallest insects. A hedgehog's skull, to show these fine teeth, appears in No. 8.

Bloodsuckers.—Lastly, we must just refer to a special habit, that of feeding upon the blood or juice of animals. Ferrets bite a small hole in a vein in the neck of a rabbit; vampires—large tropical bats—will attack men and even kill horses by piercing a vein with their teeth and sucking their blood. The largest number of bloodsuckers, however, are found amongst insects. The beetle larva shown in No. 7 is one of them, and there are many blood-sucking flies and gnats, some of which may carry disease germs to men and horses and cattle in this way. A certain mosquito carries the tropical disease malaria.

No. 9 shows the "bag of tricks" of a mosquito, which consists of a delicate tube and several needlelike drills and saws.

Conclusion.—

(1) Preying animals include:

(a) Carnivores proper: e.g., cat, tiger, dog, wolf.

(b) Insectivores; e.g., hedgehog, shrew and many birds such as the blackbird, tits, robin.

(c) Blood suckers; e.g., ferret, vampire bat and many insects such as stable flies and mosquitoes. These may carry disease germs. A tropical mosquito carries malaria.

(2) The habits of animals may help them to catch food; e.g., lurking and hunting in packs.

(3) Shape, structure and senses all assist in this; e.g., the long slim body of a cat, the keen sense of smell of a dog, and the keen sight of a hawk.

TEACHING NOTES

1. Practical work.—

I. SCRAP-BOOKS AND CUTTINGS.—

The subject matter of this chapter might be amplified by encouraging the children to look out for newspaper cuttings and pictures having a bearing upon it. A scrap-book might be made in connection with the whole course.

II. OBSERVATION AND DRAWING.—

Let each child choose any one animal which is readily to be observed, such as some insect, bird, or domestic animal, and find out all he can about the method of feeding—the food, how it is obtained, what tools the animal uses, what tactics. Notes and drawings from actual observation should be made.

2. Exercises.—

- (1) What are *herbivores*?
- (2) What are *carnivores*?
- (3) What are *insectivores*?
- (4) Of what use are sharp claws to the cat family?

(5) What sort of teeth have carnivores, and of what use are they.

(6) How does a hawk kill its prey?

(7) What weapons has a crocodile for killing its prey?

(8) What is a *fulcrum*?

(9) Why is the fulcrum very important?

(10) How does the shape of an animal help it to catch its food?

(11) On what other qualities does a carnivorous animal depend when hunting for food?

(12) Name two insectivorous animals.

(13) What sort of beak has an insectivorous bird?

(14) Make a list of animals and insects that suck the blood of other creatures.

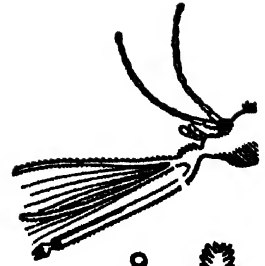
(15) Make a list of all the birds you can think of which feed upon insects and small living creatures.

(16) Write a short essay on "How carnivorous animals catch and kill their prey."

PICTURE SUMMARY

WEAPONS AND TOOLS

1. Cat's paw. Claw and sheath (enlarged).
2. Dog's head. Note strong canine and molar teeth.
3. Hawk's beak and foot for killing and tearing food.
4. Head of crocodile. Note strong teeth.
5. Hermit crab. Note powerful claws.



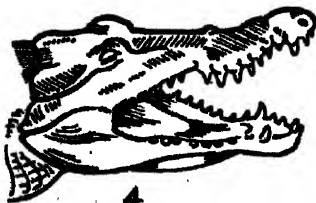
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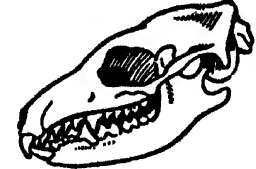
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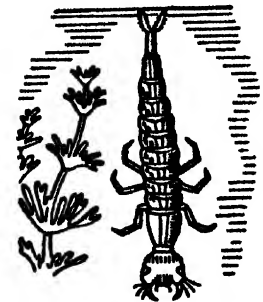
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FORM AND HABITS IN RELATION TO FOOD

6. Leopard. Note slender agile form.
7. Water beetle larva lurking with open jaws.



8



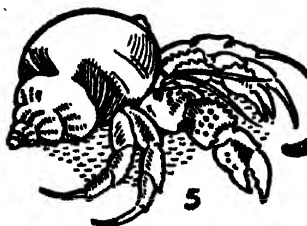
7

INSECTIVORES

8. Hedgehog and skull showing small needlelike teeth.

BLOOD SUCKERS

9. Mouth-parts of mosquito showing feeding tube and drills.



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6

VIII. THE SEARCH FOR FOOD BY ANIMALS

PART 2. HERBIVORES AND OMNIVORA

Introduction.—Just as carnivorous animals can be found amongst both vertebrates (that is, animals possessing an internal skeleton) and invertebrates (that is, animals with no internal skeleton), so can herbivores, or plant feeders. The invertebrates are represented by snails and slugs, limpets which feed on seaweeds, the various insect pests of our crops such as leather jackets, cock-chafers, and wireworms; and some of the pond dwellers, including the silver water beetle, which feeds on water weeds.

Herbivores.—

1. *Rodents.*—Amongst the vertebrates, some herbivorous forms feed on soft green food, while others nibble and gnaw wood, seeds, nuts and other hard food. A large group of animals feed chiefly on such hard foods. This group is called the *rodents*, a word meaning “gnawing.” Squirrels, rats and mice belong to this group, and so do rabbits and hares, which however prefer succulent, tender green plants. They all have at the front of the mouth level teeth bevelled like a chisel edge, and they are used like chisels for gouging out hard substances such as bark and wood. A gap separates the front teeth from the ridged molars, used for chewing and grinding the food which has been nibbled away. No. 1 in Plate VIII. shows a squirrel, which nibbles nuts, hips and haws, pine kernels and such food for preference.

2. *Grazing animals.*—Many herbivorous animals feed on grass, and spend the greater part of their lives, in the wild state, wandering about in search of pasture, and stopping to feed wherever they find it. Their teeth are similar to the rodents', that is, the front teeth are level for biting, the molars ridged for

chewing, and a gap between the two kinds is convenient for holding a bunch of grass. The horse's skull in No. 2 brings out these points.

The giraffe, shown in No. 3, feeds largely on the leaves of trees, reaching up to the branches and tearing them down. Its long neck and legs are particularly suitable for this habit.

3. *Form and habits of grazing animals.*—We noticed amongst carnivorous animals that the whole form of the body, as well as the habits of life, helped them in their particular way of feeding. The same thing is true of grazing animals. It is important that they shall be able to cover great distances in search of food, and the slender rigid legs of deer, horses and cattle, can carry them swiftly over the ground for many miles. They are particularly suited to grassy plains.

Many of these animals would be almost helpless alone against beasts of prey, for although they can kick hard and some of them can use their horns, they have no means of defence against an animal such as a tiger attacking from the flank and springing upon them. But a herd of animals can protect one another. They are on guard all the time they are feeding or roving, and a whole herd rushing and trampling together can be very formidable, especially if, like the cattle, they are also horned. So the habit of the herd is of great importance to their safety. The young of these animals are already well advanced when they are born, and soon able to run beside their mothers as the herd moves from place to place. No. 4 shows grazing deer, with their long legs for swiftness shown in detail in No. 5. In this case, only the males have horns, and fleetness of foot is the only defence against enemies. Deer, sheep and cattle have only two toes; horses, only one. The other toes have

disappeared, making the foot more rigid for bounding along.

4. *Birds*.—There are many birds which feed on grain, seeds and nuts. We have noticed that the beaks of birds of prey form weapons; in the grain-feeding birds they form strong tools like nut-crackers. They are usually broad at the base, and not very long, in contrast to the slender pincers of the insect-feeding birds like the robin. No. 6 shows a typical beak, that of the chaffinch.

Many birds which are chiefly insectivorous, or feed upon soft animal food such as worms and slugs, will also include soft fruit in their diet. Blackbirds, thrushes and starlings all do this. Other birds will feed upon wheat, young peas, and other vegetables. The pigeons are the worst of these marauders. Indeed, there is hardly a good word to be said for them, for though they probably eat a good many seeds of weeds, they counterbalance this by their misdeeds.

5. *Insects which feed on plants*.—Amongst the insects which feed on plants, some feed on the juices, some on the leaves and young shoots, some on the roots, while some can even bore their way through wood, eating it as they go. The caterpillar of the goat moth does this, living and feeding inside willow trees. The woodworm and death-watch beetle feed on dead wood.

There are so many insects that feed on plants that it is possible only to deal with two examples. No. 8 shows the frog hopper, or frothing hopper, familiar to everyone in "cuckoo spit." This insect feeds on plant juices. It is easy to remove one of these insects with a small twig and examine it, when it will be seen that on the underside of the head there is a triangular piercing tube, ending in a sharp point. By means of this tube a hole can be made in a juicy stem or bud, and the sap can be sucked. All plant bugs feed in this way.

No. 9 shows the very common caterpillar of the cabbage white butterfly, which feeds on the leaves, not only of cabbages,

but of many plants of the same family, and on nasturtium leaves. The jaws are also shown, greatly enlarged, from which it will be seen that they are really a pair of small, sharp blades, or knives. They work very rapidly, producing a clean cut. It is interesting to watch the businesslike way in which a caterpillar cuts away a segment of leaf, and the speed with which it is done. Most insects which feed on the solid parts of a plant have jaws like this.

Omnivorous animals.—Although we have spoken as though all animals were either carnivorous or herbivorous, they do not all fit so neatly into a scheme, for many prefer a mixed diet. These we call *omnivorous*, meaning they will eat anything at all. We ourselves are typical of this class, with a wide range of food. Civilised man eats fish, flesh and fowl, fruit and vegetables, and to this he adds many shell-fish and special dainties according to the tastes and customs of his country. But amongst primitive peoples the range is much wider, and includes insects and animals we would not touch, such as rats and locusts. The rat, a rodent, is one of the least particular animals as regards food. It will eat almost any refuse from rubbish heaps, and will even gnaw through iron and lead pipes. Amongst garbage feeders, the gulls must certainly be counted, for they can frequently be seen searching refuse dumps for food. Frogs begin life as vegetarians, for the tadpoles feed on water weeds, but quite soon they begin to add small animals to their diet, and when they become frogs, their food is entirely animal. Earthworms have a mixed diet of decaying and fresh plants together with eggs and small grubs which they devour with the soil they swallow.

Conclusion.—The chief points to remember about herbivorous animals are:

- (1) The mammals fall into two main groups, the rodents which can gnaw hard food, wood, bark and nuts, and the grazing animals.
- (2) The rodents have chisel-like front

teeth and ridged molars. Those of grazing animals are rather similar, and quite different from the teeth of carnivores.

(3) Grazing animals frequently roam in herds, which give some protection against beasts of prey.

(4) Many birds feed on seeds, some on fruit. Those which crack seeds have strong, short beaks.

(5) There are insects which feed on plant juices, and others which feed on the solid parts.

TEACHING NOTES

1. Practical work.—

I. MICE.—It would be appropriate to accompany this chapter by a study of mice, kept and watched in the classroom, and a study of the life histories of moths and butterflies.

It is best to keep white mice in a small glass and zinc tank, which can be completely washed every day, when there need be no smell. A wooden framework is not desirable. The mice can have a run on a table while their home is cleaned, while a ladder, trapeze or other device in the tank helps to give them exercise and variety. Corn, or specially mixed seed, dry bread and water should be provided. If breeding takes place, the buck must be removed and the doe given materials for a nest—hay, cotton-wool—and allowed to remain secluded and undisturbed till the young are well grown. As the cage cannot be cleaned, it is best to remove it to a store room or shed where the smell does not matter.

II. BUTTERFLIES AND MOTHS.—Eggs or larvae of many species can be obtained from dealers at a reasonable cost, though a careful search will usually provide plenty of interesting material. Care must be taken to provide the proper food plants. Puss moth caterpillars, with their strange "frightful" appearance, are interesting, so are swallow-tailed and other "stick" caterpillars. Amongst those to be readily found are the caterpillars of the cabbage white butterfly, the underwing moth and peacock butterflies on elm and other trees; small

tortoiseshell on nettle; lackey moth and magpie moth on fruit trees and bushes respectively; tiger moth and drinker moth amongst long grass, docks and coarse herbage; swallow-tailed on ivy, elder and several other trees.

It is necessary to keep the food plant fresh in water. Either the jar should be covered with fine net, or placed under a shelf in the cage, the stalks passing through a small hole into the compartment containing the caterpillars, so that they cannot drown themselves in the water.

In addition to watching the feeding habits and movements of the caterpillars, their curious method of growth at the periodic shedding of the skin can be seen, and with luck, the final pupation and emergence of the adult insect. It is necessary to find out in each case what conditions are essential for pupation, for some caterpillars bury themselves in soil, others find a crevice in bark or amongst stones, or hide amongst the stems and leaves or amongst fallen leaves of the food plant. Some provision must be made to simulate natural conditions.

Many moth caterpillars enclose themselves in a silken cocoon before pupating, whereas butterfly pupae have at most a loop or girdle, or a thin bed of silk strands. The kinds mentioned above pupate as follows:

Cabbage whites, large and small, pointed greenish pupa or chrysalis with scattered spots, find a crevice or wall, and attach themselves by a girdle near the "tail."

Tortoiseshells, large and small, gregarious caterpillars, wander away to pupate; pointed pupa suspended.

PICTURE SUMMARY

RODENTS AND GRAZING ANIMALS

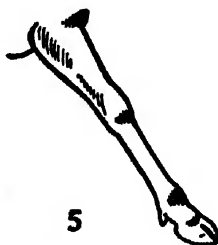
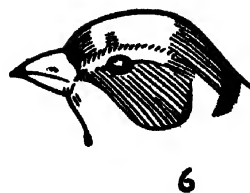
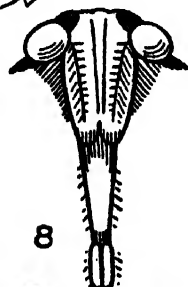
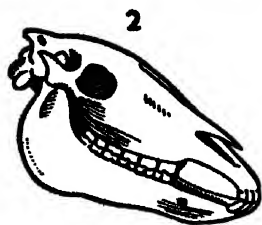
1. Squirrel—a rodent.
2. Skull of horse, showing level teeth and gap between front and molar teeth.
3. Giraffe. Tears branches of trees for food.
4. Herd of grazing deer.
5. Leg of deer, showing slender shape for speed.

SEED-EATING BIRDS

6. Head of chaffinch, showing blunt, strong beak.
7. Wood pigeon — farmer's pest.

INSECTS WHICH FEED ON PLANTS

8. Frog hopper. Note enlarged piercing tube for sucking sap.
9. Cabbage white caterpillar. Note enlarged knifelike jaws (j).



Peacock butterfly, gregarious caterpillars; brown and greenish-yellow pupa suspended from a twig.

Red underwing moth, pupa with bluish bloom, in slight cocoon between leaves or bark.

Lackey moth, gregarious caterpillars in common web or tent; dark barrel-shaped pupa in loosely-formed cocoon.

Magpie moth, glossy black pupa banded with orange, slightly attached by a few threads at hind end. No cocoon. Twigs.

Tiger moth, glossy black pupa surrounded by greyish web incorporating long hairs shed from body. Loosely attached to some support.

Drinker moth, compact cocoon encloses glossy brown pupa. Some of the larvae hibernate amongst soil and herbage.

Swallow-tailed moth, elongated cocoon suspended from a twig.

2. Experiments.—

I. Different plants may be placed with the caterpillars to see whether they have any range of choice, or confine themselves to one food plant only.

II. It is important to find by experiment the exact conditions required by each kind of caterpillar. If immature caterpillars appear torpid and listless, do not eat with enjoyment, and do not grow, something is wrong. Frequently the atmosphere is not kept moist enough. If the food plants are fresh they give off water vapour which makes a damp, cool atmosphere, but in addition spraying with a fine spray may be necessary. Avoid

too strong light, which is unnatural. There must be adequate through ventilation, to prevent the attack of moulds. This is best at the lower part of the cage, and may be provided by means of panels of perforated zinc. The cage should also be able to be easily cleaned.

3. Exercises.—

- (1) What are *vertebrates*?
- (2) What are *invertebrates*?
- (3) Make a list of vertebrates.
- (4) Make a list of invertebrates.
- (5) What is a *rodent*?
- (6) What kind of teeth has a rodent, and of what use are they?
- (7) Make a list of rodents.
- (8) How is a giraffe well fitted for obtaining and eating its food?
- (9) Why is the habit of living in herds of great importance to the animals that do so?
- (10) Of what use are slender rigid legs to grazing animals?
- (11) In what way are pigeons a pest to gardeners?
- (12) From what different parts of a plant can insects obtain food?
- (13) How does the frog hopper obtain its food from a plant?
- (14) How does a caterpillar obtain its food from a plant?
- (15) What is an *omnivorous* animal?
- (16) Make a list of omnivorous animals, saying what foods they eat.
- (17) Name some insects which feed on wood.

IX. HOW SOME LOWER ANIMALS LIVE

PART I. SEDENTARY ANIMALS

Introduction.—In considering how animals obtain a living we have dealt chiefly with the higher animals, or vertebrates, but the invertebrates or lower orders have just the same needs, and have many interesting ways of meeting them.

Mouth and stomach animals.—Most of the lowest animals live in the sea, and some of them consist almost entirely of a mouth and a stomach. They may move about freely to find their food, as do jelly-fish, or they may become attached to a rock, as do the sea anemones and corals, and remain in one place, waiting for food to be brought to the

floor. We call these *sedentary*, which means sitting. No. 1 in Plate IX. shows the beadlet anemone found on our rocky shores. When uncovered by the tide these look like dingy blobs of jelly, but when the sea has covered them they expand and glow bright crimson or olive green, with blue spots like beads. They also unfold rows of short fingerlike feelers or tentacles, in the middle of which lies the mouth. Both sea anemones and their jelly-fish cousins catch their prey with their tentacles, and push it into the mouth, which sucks it into the stomach. They are helped by hundreds of tiny darts which are enclosed in minute bubble-like cases all over the tentacles. These bubbles break as soon as a tiny trigger is touched, and the thread-like darts, each with a drop of poison at its base, shoot out. As they find their target, the poison enters the victim's skin and it is paralysed.

Eggs are formed on folds of skin inside the stomach, and swept out of the mouth. They hatch and swim about for a time, so it is possible to colonise new places, then they settle down and grow like their parents. Anemones can shuffle about over the rock and will often change their places, but they do not go far.

Barnacles.—Yet another kind of sedentary animal is a cousin of the free-moving shrimps and crabs, but has lost the use of its limbs after the larva has attached itself to a rock. This is the barnacle, of which there are several kinds. The best known is the acorn barnacle, seen encrusting rocks, breakwaters, and shells. A larger form is the stalked goose barnacle, which attaches itself to wooden ships and piles. The armour plates have formed a sort of tent in the acorn barnacle, enclosing the whole body, while in the goose barnacle they have formed a five-piece shell. The legs are thin, and serve as a net or scoop to catch food. They are branched and covered with stiff hairs, and open and close all together like a hand, to snatch what they want. No. 2 shows these barnacles.

Tube dwellers.—Many sedentary animals have taken to living in tubes, especially if their home is in the sand or mud of beaches or estuaries left uncovered at low tide. In this way they are protected from dry air and from their enemies, such as sea-gulls, at low tide, and when under water they will not be washed away, or seen by their enemies in the water, such as starfish, crabs and fish.

1. *Shell dwellers.*—Most of the so-called "shellfish" are sedentary, and some, like the cockle, are tube dwellers. At low water their presence is often betrayed by sudden jets of water from hollows in the sand; cockles, razor-shells, and gapers all squirt out these little fountains. The foot is their spade; in some, for instance the razor-shell or solen, it is very long, and in all extremely muscular and active.

The piddock or pholas is actually able to bore into solid rock, the tip of its foot acting as a file. The ship-worm, which may be a foot long, does great damage to wooden ships and posts by boring into the wood. Though it has a wormlike body it is really one of the shell dwellers, but its shell is a mere remnant stuck on one end. These animals are shown in Nos. 3 to 7.

They obtain their food from the water or from the scum of decaying matter which forms a thin film on the sand, and their oxygen for breathing from the water. If they dwell mainly just below the surface, like the cockle, very short tubes will suffice to draw water into the shell and drive it out again, but if they make a deep burrow and live at the bottom, much longer tubes are needed. In this case they are usually bound together into one long hose-pipe, as in the razor-shell. The tubes are called *siphons*.

2. *Sea-worms.*—Many sea-worms also live in burrows in the sand like the lug-worm, shown in Plate II. Sometimes they make tubes for themselves out of sand and mud cemented together, as does *sabella*, whose tubes can be found sticking out of watery sand at very low tide. A domed bubble at

the top shows that the worm is at home. If you can watch them as the tide covers them again, you may see the worms rise to the top of the tubes and unfold their lovely plumed gills in fanlike tufts to take in a fresh supply of oxygen. They are of pearly pink, white and red colours. The frail empty tubes are often strewn over the shore.

The common, small spirorbis makes wavy limestone tubes which you must have seen fixed horizontally on the shells of other creatures, such as whelks and limpets—which are also favourites with the barnacles. The advantage of this is that they are carried about. Their hosts are half-sedentary themselves and can fix themselves very securely during storms or other dangers. They are also found on seaweeds.

Sea squirts.—These curious animals are really allied to the vertebrates. Their name indicates their habit of suddenly squirting out a jet of water if they are touched. Though they are quite common in rocky crevices and caves and even on the bare rock at low tide, only very observant people would notice them because they are so small. On turning over large stones one often comes across pretty mosaic patterns—like the Eastern porcelain brooches sometimes sold for a few pence. They may be yellow, orange, purple or indigo, and the pattern is really made up of tiny animals embedded in a smooth, firm jelly which makes it difficult to dislodge them. Some-

times larger, solitary ones are found, about $\frac{1}{2}$ in. high, and then it can be seen that there is a mouth, leading into a U-shaped tube which opens again just below the mouth to eject unused food. They feed on small creatures and particles brought by the currents, and spend their whole adult life in this way. But the curious thing is that, like the barnacles and sea anemones, they were not always like this, for as babies they swim about freely and look like very small transparent tadpoles, with a large body and rigid tail. It is this stage that relates them to all the higher animals or vertebrates.

By and by, the "tadpole" stands on its head on a rock, loses its tail, and changes gradually into the sedentary sea squirt.

Conclusion.—All sedentary animals must have their food and oxygen brought to them. Some, like the sea anemones, catch large animals which approach, but most feed on particles brought by the currents. Sometimes, as in the shell-fish, the current flows right through the animal. Protection may be—

- (a) By weapons—the darts of sea anemones.
 - (b) By a shell or tube—sabella.
 - (c) By burrowing into a tube—lug-worm, razor-shell.
 - (d) By a slimy covering—the sea squirts.
- With the exception of the shipworm and the piddock, all the animals mentioned can be readily found on our shores.

TEACHING NOTES

1. Practical work.—

I. OBSERVATION.—By looking in a fishmonger's shop it will usually be possible to see mussels, or scallops, or whelks with one or more acorn barnacles encrusting the shell. Small spiral limestone cases of *serpula*, and other sea-worms can also be seen, both on these and other shells.

II. SHELL COLLECTING.—Many children have collections of sea shells made during the holidays. These may be named, and a comparison made of their structure, noting that whether they have one or two valves, growth always begins at one point in each, called the nucleus or umbo, by the deposition of a thin layer of shell round it.

PICTURE SUMMARY

MOUTH AND STOMACH ANIMALS

1. "Beadlet" anemone common in rock pools. When uncovered by the tide these look like dingy blobs of jelly.



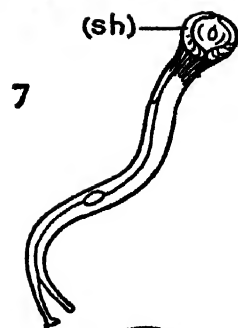
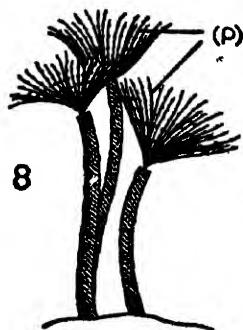
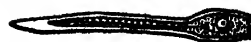
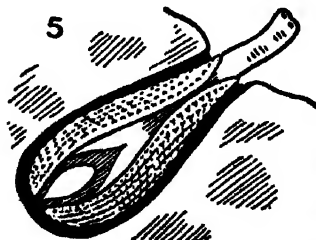
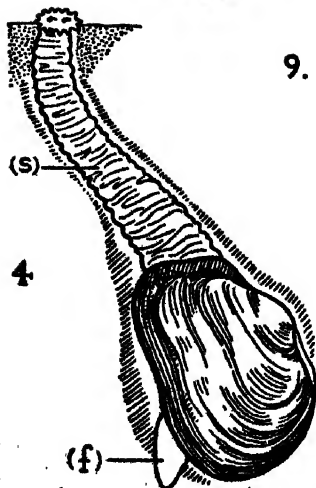
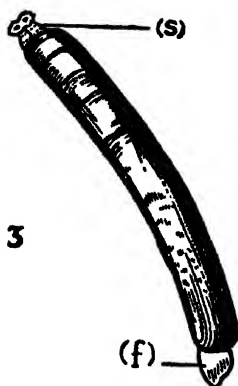
BARNACLES

2. Acorn barnacles with legs forming a fishing net (n). Goose barnacle, stalked.



TUBE DWELLERS

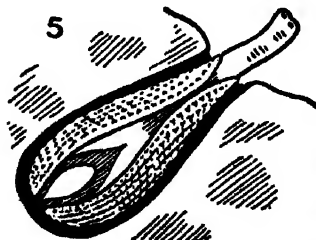
3. Razor-shell digs with long foot (f). Breathes and feeds through siphon (s). Sandy shores.
4. Gaper in burrow showing foot (f) and siphon (s). Muddy shores.
5. Piddock bores into rock. Tip of foot forms file.
6. Rock borings by piddock.
7. Shipworm (really "shell-fish"). Note reduced shell (sh).
8. Worm Sabella lives at low tide level in sand tube. Note plumed gills (p).



9. Sea squirt. Note how water enters and leaves food canal. "Tadpole" and small portion of colony also shown.

SEA SQUIRTS

9. Sea squirt. Note how water enters and leaves food canal. "Tadpole" and small portion of colony also shown.



As growth is freer during the spring and early summer, a closer autumnal deposit makes a line which marks the end of each year's growth. Note, too, the smooth, sometimes pearly lining of the shell, and look out for irregular places which show where repairs to injury have been made.

III. OUT OF DOORS.—A study of fresh water "shellfish" or molluscs, the garden snail, and the earthworm, would give the children some idea of the kind of creatures dealt with in this chapter, unless, indeed, the school is at the seaside and the marine creatures can be studied alive.

2. A marine aquarium.—If the teacher cares to take the trouble, a marine aquarium may be set up in which some of the sea creatures can be established for a time. Some sea anemones will flourish for years, while other animals will remain alive perhaps for a few days, sufficiently long at any rate to be watched as they feed and move. The creatures must be transferred as speedily as possible to their new home, but many will travel quite safely, even by post, wrapped in seaweed (bladder-wrack is best) in oilskin or greaseproof paper, placed in a water-tight tin. At least two tanks must be prepared, one to receive the consignment when it arrives, and another to which the survivors can be transferred after a few days, for some weaklings almost invariably die.

The bed. Sea sand must be thoroughly washed in fresh water, then in salt, and laid at the bottom of the tank to a depth of almost 2 in. Rockwork, either artificial (from dealers) or of stones and shells also well washed, is necessary to give shelter and variety of surface for the inhabitants. *Sea water* will be necessary, and the original level must be maintained by adding a little fresh water to make up for evaporation.

Aëration.—Seaweeds growing on stones should be introduced, such as sea lettuce or sea grass, to provide oxygen, and the water should be beaten with a small board

or bat to mix air with it, or air can be blown in through a bicycle pump or bellows. (*N.B.* No metal parts must actually touch the water or they will be corroded.) A glass tube can be used to blow through.

Inhabitants.—The tank should never be crowded, and any animals of carnivorous habits are best kept separately; e.g., small starfish and small sea urchins (about 1—2 in. diameter). Feed with bits of fresh fish or shellfish. Different kinds of sea anemones are best kept separately also.

The beadlet anemone thrives, and will even reproduce freely in captivity. Food as above.

Some of the worms which make tubes of mud and sand will live for a time; e.g., sabella and terebella. Feed with microscopic live creatures shaken in from a bunch of fresh seaweed. Much bladder-wrack is used for packing fish, lobsters and crabs, and this can sometimes be obtained. Also one can keep shrimps and small prawns, very small crabs and hermit-crabs, provided the water can be very well aërated. Feed with small pieces of raw fish.

It is best to drop small pieces of food just above the animals with a pair of wooden forceps or a wooden fork or skewer. The anemones seize the pieces with their tentacles. If a small piece of food is pushed down beside a starfish between it and the glass side of the tank, it may be possible to watch it feed, which it does by obtruding the stomach.

Remove all waste food frequently, otherwise it will be attacked by moulds, and the tank will be infected. Shellfish do not thrive readily in an aquarium, but cockles and mussels from the fishmonger will often live for a few hours in sea water, and the siphons by which they draw in water can be seen. If a little finely powdered carmine is dropped beside them with a dipping tube the currents entering and leaving can also be detected.

3. Exercises.—

- (1) What are *sedentary* animals?
- (2) Name three sedentary animals, saying where they live.

- (3) How does the beadlet anemone obtain its food?
- (4) How do the anemones form their young?
- (5) What are *barnacles*?
- (6) How does the goose barnacle obtain its food?
- (7) Why do some sedentary animals live in tubes?
- (8) How can you detect the presence of shell dwellers at low tide?
- (9) What harm is done by the piddock and shipworm?
- (10) For what are the *siphons* of shell dwellers used?
- (11) Where do many sea-worms live?
- (12) How do sea-worms obtain oxygen?
- (13) How do limpets protect themselves during storms and other dangers?
- (14) Why are sea squirts so called?
- (15) Draw a picture of a sea squirt, showing the mouth, leading into the U-shaped tube.
- (16) Write a short life history of a sea squirt.

X. HOW SOME LOWER ANIMALS LIVE

PART 2. ON LAND

Introduction.—It is a far cry from the sea to the land, yet a great many water animals have adapted themselves to live on land. Probably it happened in easy stages, some of them creeping up the fresh water rivers, then into ditches and marshes, others reaching the land by way of the sea shore, where they were still covered by water twice a day, and it must have taken thousands, even millions of years, to bring about the complete change. Armour-plating, a shell, or scales would be a great help in preventing the body from shrivelling up in the dry air, and perhaps in providing a sheltered chamber which would hold water for breathing for some time, for remember, all breathing takes place in a damp atmosphere only.

Invertebrates in damp places.—Many invertebrates emerging from water have never reached dry land at all, perhaps for lack of sufficient protection, or perhaps because they found all they needed without seeking farther. They stayed in the damp places, beside streams, under stones or logs, under decaying bark and leaves, or in the soil. Here they could keep a moist skin, and avoid the sunlight which in their case is

harmful. Some of them are shown in Plate X., Nos. 1, 2 and 3.

Earthworms feed on soil and bits of plants; many grubs of flies, such as the leather jacket which grows into a daddy-long-legs, find food in the soil, so do many beetles and their larvae, while the millipedes feed on the roots of plants.

An interesting little creature is the woodlouse or slater, for though he is so dull to look at, he is really related to the shrimps, and under his armour-plating there are gills which must be kept moist. But he also breathes by means of tubes like those of insects which were mentioned in Chapter II., so that he is really trying both a new way and an old. The centipedes and millipedes are also tube breathers.

Sometimes in damp cellars or outhouses you come across small silvery-looking insects, called silver-fish, which flash rapidly in and out of sight. These are amongst the lowliest insects, for they have no wings, and both young and parents are alike. The majority of insects, however, are winged.

Invertebrates on dry land.—The greatest number of invertebrates found in dry situations belong to the group with jointed armour and jointed feet—the *arthropods*, a name

meaning jointed feet. The lowest family of arthropods is that of the crabs and shrimps or *crustacea*. These are found almost entirely in water; but we have seen that the woodlouse is found in damp places, and there is also a pioneer member of the family which roams on land and even climbs trees. This is the tropical land crab, a very destructive and objectionable enemy of man, for hordes of these crabs will storm a village, enter houses and tear and devour everything that is in their path—even furniture, stores and clothes. The land crab is shown in Plate X., No. 4.

Spiders are also arthropods; see Plate X., No. 5. A spider has its head and chest or thorax joined, but separated by a narrow waist from the trunk or abdomen—so narrow a waist that it can take only liquid food. It lives by sucking the juices of flies. A spider has a pair of small breathing sacs on the under side of its abdomen. These contain thin breathing plates arranged like the leaves of a book and so are called lung-books.

A spider can be distinguished from an insect by the number of its legs, for an insect has three pairs and a spider four pairs.

Insects.—Amongst invertebrate animals insects belong to the group best adapted to life on land, and they have added the air to their province. One of the most highly developed insects is the dragonfly, shown in Plate X., No. 6. It has a compact, powerful body and four long slender wings. It is sometimes called the "hawk" amongst insects, because of its swift, powerful flight and habit of striking down other insects with its strong jaws, but it is more like a "swallow" in its habit of attacking its victims on the wing.

Like all insects, the dragonfly has its body distinguishable into head, thorax and abdomen. The head bears jaws like a pair of shears, keen prominent eyes, and a pair of short feelers or antennae. The thorax has three pairs of legs, one to each joint or segment, and wings on the second and third segments. Notice the massive nature

of the thorax, which supports the powerful wing muscles. Insects have an efficient system of tubes for breathing.

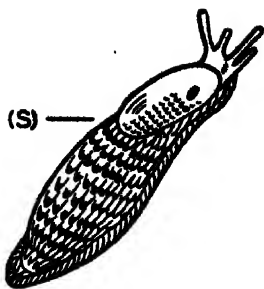
1. *Flight*.—The power of flight is one of the chief advantages which insects possess, for it allows them to roam widely in search of food and of suitable places to lay their eggs. The lowliest insects, like the silverfish, have no wings, while some insects have lost one pair, as in flies; or they are hooked together, as in bees and wasps. In beetles, the first pair has become a horny covering for the second pair.

2. *Metamorphosis*.—This word, meaning "change," is used to indicate the stages in the lives of insects—or other animals—when the young and the adults are different in form and structure. The metamorphosis of insects is important because it enables the first stage, or *larva*, to give all its time to feeding, then when it is fully fed, the second or *pupal* stage is usually passed in a state of deep sleep, during which bodily changes take place which convert the larva into the adult, or *imago*. The chief duty of the imago is to lay eggs. Some of them do not feed at all. Plate X., No. 7, shows how different an adult insect and an imago can be. It is the click beetle, with its very destructive larva, which is the wireworm of our gardens.

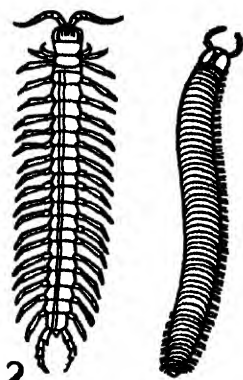
Not all insects have a metamorphosis, for some develop directly from the egg to the adult stage, growing a little at a time. Since the horny outer covering will not expand, growth can take place only by cracking and shedding the skin, so that the body can expand while the under skin is soft. This soon hardens. Larvae also grow in this way. Grasshoppers and locusts have direct development.

Some insects do not have a true pupa, but remain active during the changes which follow the feeding stage. This is often the case with water insects, for instance, the dragonfly. When the wings can be seen the insect is no longer called a larva, but a *nymph*.

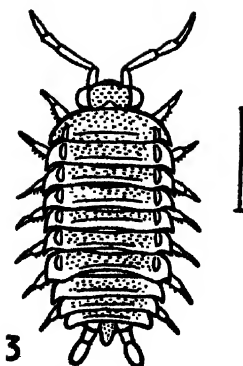
3. *Food of insects*.—One reason why insects are so successful and widely spread



1



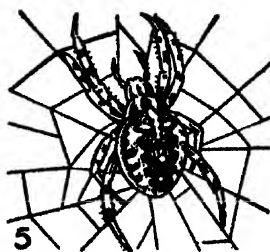
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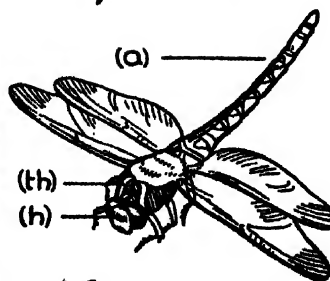
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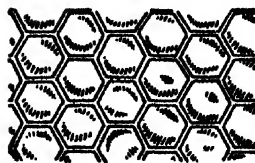
PICTURE SUMMARY

DAMP PLACES

1. Black slug. Note position of vanished shell (s), a mere plate under skin.
2. Centipede. Kills worms and grubs. Millipede. Feeds on plants.
3. Woodlouse.



(Q)



9

INVERTEBRATES ON DRY LAND

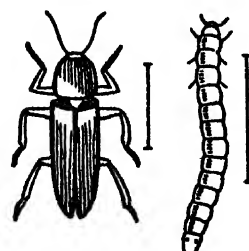
4. Land crab, pioneer of life on land.
5. Garden spider. Breathes by lung-books.
6. Dragonfly, a typical insect. Head (h), thorax (th), abdomen (a), three pairs of legs; two pairs of wings.
7. Click beetle and larva (wireworm which destroys roots).
8. Hive bees—worker (w) and drone (d).
9. Queen of the hive (Q). Honeycomb.



(w)



8



7

is their choice of food materials. There is hardly anything that is not eaten by some kind of insect—wool and hair, on which the larvae of clothes' moths feed, wood, dung, as well as all sorts of plants and animals, including their juices.

4. *Care of the young.*—Another reason for their success is the great care shown in choosing homes and food for their young. Some insects have developed even family life in great communities. Amongst these the ants and bees have gone farthest for different members have their own work and even differ in form according to the work they do. Nos. 8 and 9 on Plate X. show the different forms of bees in one hive—the queen, the workers and the drones.

The queen bee is little more than a slave, for the workers keep her forever busy laying eggs, and though they tend her, it is not through loyalty, but so that she can get on

with her work. They themselves are busy all the time collecting pollen and nectar, making wax and comb, filling the cells with honey, cleaning the hive, or tending the queen and the larvae.

The drones or fathers fertilise the eggs. At the end of the summer the drones are driven out or killed.

Conclusion.—Invertebrates on land must either remain in damp places or have something to prevent their bodies and breathing organs from drying up.

Arthropods, and especially insects, are the most successful invertebrates on land.

Insects owe their success to:

- (1) Their breathing tubes and horny covering.
- (2) Flight.
- (3) Metamorphosis.
- (4) Wide choice of food.
- (5) Care of the young.

TEACHING NOTES

1. Practical work.—

I. THE STUDY OF ANIMALS IN DAMP PLACES.—Most of the animals dealt with in this chapter are easy to obtain. Those which live in damp places may readily be kept alive in boxes of damp soil, but constant care must be exercised to see that it is sufficiently damp without being water-logged, and that it is loose enough to allow sufficient air to enter. Darwin carried out his famous work on earthworms, which extended over many years, with nothing more elaborate than ordinary porous plant pots, and if these are kept covered with glass plates, or saucers, which are removed sufficiently often to prevent moulds from growing, probably they cannot be bettered. Wooden boxes are also quite useful. Earthworms, slugs, snails, centipedes and millipedes, various beetles and their larvae, pupae of various kinds, larvae of daddy-long-legs (leather jackets), wood-

lice, can all be kept in this way. The pots or boxes should not be more than about three-quarters full, and it is a good plan to strew the surface with pieces of rotting bark, decaying leaves, and a few stones, which will give shelter and additional protection against dry air.

II. FOR OBSERVATION.—Glass-sided vessels are useful for observation in many cases. If small animals are to be seen, these vessels must have only a small cross-section, and they should be covered with sheaths of dark paper or kept in the dark when not in use. Plain tumblers, straight lamp chimneys and small test tubes are useful. Lamp chimneys can be filled with soil and stood in a saucer of water, which will soak up and keep the soil moist. They should be lightly packed with fine shavings or cotton wool at the bottom. A good plan for observing burrowing animals such

as ground beetle larvae is to put together two glass plates, separated at each side by a strip of wood $\frac{1}{4}$ in. to $\frac{1}{2}$ in. thick. The space between can be filled with friable soil, and the two plates held together by rubber bands. The lower edge can stand in water. If a rack is made to hold these plates, a large number will take up very little space, while a rectangular trough, such as a bulb bowl, will supply water for them all. (This idea was originated by Mr. Hugh Main.)

III. THE STUDY OF BEES.—It may not be generally known that glass-sided observation hives can be obtained, and are in use in many schools. They are set up inside a classroom, but so arranged that the bees have a clear exit to the open air, either by means of a window or a specially made aperture through a wall. In addition to its biological value, the study of such a hive forms a useful introduction to the art of bee-keeping.

2. Exercises.—

- (1) What kind of protection had early land dwellers?
- (2) How did this protection help them to live on land?
- (3) Name three animals which can be found in damp places.
- (4) Why do certain animals need damp surroundings?
- (5) In what way is the woodlouse an interesting creature?

- (6) What is a silver-fish?
- (7) What do you understand by the word *arthropod*?
- (8) What creatures belong to the family *crustacea*?
- (9) Why is it true to call the land crab a "pioneer" of the *crustacea* family?
- (10) What are the distinguishing features of an insect?
- (11) How can you tell that a spider is not an insect?
- (12) What are the *lung-books* of a spider?
- (13) Why is the dragonfly called the "hawk" amongst insects?
- (14) Draw from memory a picture of a dragonfly, naming the parts.
- (15) What are *antennae*?
- (16) Why is the power of flight so valuable to an insect?
- (17) Name three different types of wings to be found among insects.
- (18) What does the word *metamorphosis* mean?
- (19) What are the three stages in the life of most insects?
- (20) Why must some insects shed their skins several times?
- (21) At what stage of its life is a dragonfly called a *nymph*?
- (22) What foods can insects eat?
- (23) What are the three different kinds of bees to be found in a hive?
- (24) What is the work of each of these bees?

XI. HOW THE BALANCE OF NATURE IS PRESERVED

PART I. PLANTS

Introduction.—Just as animals compete for food and other necessities of life, so plants struggle with one another for the food in the soil by means of their out-reaching roots; and for sunlight and air

by their spreading leaves. They, too, are influenced by the conditions of their surroundings, such as heat and cold, prevailing winds and rain, and the kind of soil in which they grow. Thus a number of checks exist which prevent particular plants from becoming "the lords of creation" just as is the

case with animals. Should these checks be removed, then plants are able to increase until they dominate a region.

Man's interference.—Man interferes with the lives of both plants and animals, and controls many of them. He plants crops and removes weeds. If, however, when he has dug the soil he omits to plant his crops, then weeds rush in and take possession. Frequently, one kind of weed will be first in the field in large numbers, especially if it has small, light seeds, and more particularly if these are provided with plumes. No. 1 on Plate XI. shows a dandelion plant, which offers a good example of what happens. Probably thousands of plumed fruits, each containing one seed, arrive together, blown by the prevailing wind. They alight on the tilled soil and in a few days put forth a root and a tuft of green leaves. Quite soon the root pushes down and establishes itself firmly in the soil. Meantime, more leaves grow and expand, so that a rosette is formed. If there is room these rosettes press against the soil, so that a number of plants cover the whole surface and other seeds have difficulty in finding a place. Soon the long root will be so firmly fixed that it will be very difficult to get rid of the plants.

Even when the ground has been planted, weeds generally find plenty of space between the crops in which to establish themselves.

It is often just as dangerous to introduce new plants into a country as it is to bring new animals. In our country, gorse, blackberry and wild rose will often establish themselves in meadows which are left untended for a while, and very soon a thicket like that which surrounded Sleeping Beauty's palace will have grown up. When these plants were introduced into New Zealand they had a fine opportunity, and soon spread so widely as to become a nuisance. Gorse planted as hedges sent out suckers which very soon grew up into new plants, making thickets a hundred feet wide. A gorse plant with a sucker is shown in Plate XI., No. 2. Gorse is helped, too, by its pods, which explode

with a "pop" when the seeds are ripe, hurling them several yards. Once established, the tough wiry roots are very difficult to dig or even to burn out.

Blackberry grows in much the same way, and in addition, its seeds are widely carried by birds and man. Heather was introduced as an ornamental plant, but spread and became a pest. All these plants crowded out the valuable sheep pasturage, and so menaced the livelihood of the farmers.

Watercress was another plant introduced into New Zealand which spread till it endangered the water supply by choking the streams. It was very expensive to hire labour to clear the streams, so willow trees were planted to shade them, for watercress needs open air and sunshine. However, the pink roots of the willow trees spread through the water, and it cost just as much to keep these cut back as to cut back the watercress.

A rather similar case is that of the Canadian pondweed which chokes some of our English rivers and streams. It grows very rapidly, and when it is cut or broken small pieces floating in the water reach new districts, grow roots, and start the trouble again. A spray of it is shown in Plate XI., No. 3.

Animals check plants.—Many animals affect the lives of plants, chiefly by feeding on them. In the case of such plants as gorse and blackberry, there is no doubt that thousands of seedlings are eaten by rabbits, sheep, and cows, in the young stage before they produce prickles. Succulent young shoots of many kinds are eaten before they have the chance to become tough, woody suckers or plants. Donkeys eat thistles, which are most noxious weeds. The work of rabbits in keeping down even the spread of forests is shown by an experiment which was carried out on Brandon Heath, in Suffolk. A part of the heath which consisted of smooth, closely cropped turf was enclosed by a fence which was fixed deeply into the ground to stop rabbits from burrowing under it. In

three or four years the enclosure was covered with healthy young fir trees, which have winged seeds, as shown in Plate XI., No. 4. This was entirely due to preventing the rabbits from nibbling the seedlings.

When you consider how many seeds of trees fall to the ground each year it is remarkable how few small trees of beech, horse chestnut, sycamore and others are to be found under the trees. No doubt this is partly due to the shade thrown by the parent trees, but a search will show what a large number of acorns and horse chestnuts have been nibbled by mice, squirrels and rabbits. We must not forget in this connection what numbers of seeds are eaten by birds. Plate XI., No. 5, shows a nuthatch, a bird which lives on all kinds of hard nuts, which he cracks with a sharp blow of his beak after fixing the nut in a crevice of a tree trunk. He is only one of many seed-loving birds.

Plant communities.—If a new road is cut, or a piece of land is left waste, it will be noticed that a succession of plants appears, usually those with light seeds at first, and probably few kinds. After a year or two, more kinds will be found, and as they become established, it will usually be found that two or three kinds are present in far larger numbers than the rest, probably in large patches. These are the plants which find the particular conditions most favourable. We call them the "dominant" plants. Probably there will be others which, though not so numerous, are growing fairly freely and seem to be flourishing. These we call "subdominant." The rest will be scattered in smaller numbers and may be quite rare.

Plants and soils.—It is found that groups of plants tend to live on particular kinds of soils, so that if we see one kind of plant, we expect the others. For instance, dry oakwoods have soft grass, bracken and bluebells on the wood floor (see Plate VI., No. 9) while hazel bushes form the undergrowth. Oak and ash woods on a stiff mixed clay and chalk or marl soil, have hazel, spindle, wayfaring tree and field maple growing with them. Festooned over the bushes grows traveller's joy (the wild clematis), while the undergrowth will have some peculiar forms—the pretty four-leaved herb paris; the gladdon, an iris whose large podlike fruits split to reveal bright orange seeds; and the dark purple nettle-leaved bell-flower.

Some of these are shown in Plate XI., Nos. 6 to 9.

Conclusion.—

(1) We have seen that there is a balance amongst plants, as amongst animals, and that any interference may give some plants a chance to spread more widely.

(2) This is particularly evident when man interferes, either by clearing ground, by allowing it to run waste, or by taking plants to new countries; for instance, the introduction of gorse, blackberry and watercress in New Zealand.

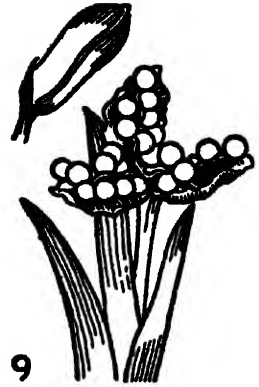
(3) We see also that animals may check the spread of plants by eating the seeds or the young plants; for instance, rabbits eat young fir trees.

(4) Plants grow in communities. The soil determines what plants will be found. For instance, oak-ash woods grow on mixed chalk and clay soil.

PICTURE SUMMARY

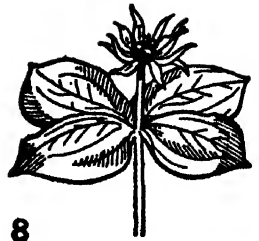
PLANTS WHICH COLONISE CLEARINGS OR WASTE GROUND

1. Dandelion. Note tap root, rosette of leaves, "clock" of plumed fruits.
2. Gorse. Sends out suckers to form new plants. Hurls seeds from explosive pods.



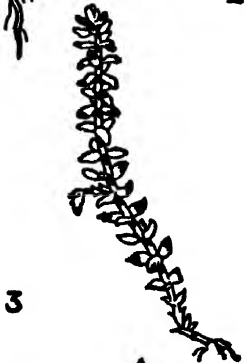
PLANTS INTRODUCED TO NEW COUNTRIES

3. Canadian pondweed. Broken pieces form new plants.



PLANTS INFLUENCED BY ANIMALS

4. Young fir tree. Winged seeds grow in cones. Young trees eaten by rabbits; seeds by birds.
5. Nuthatch cracks nuts with beak.



PLANTS OF OAK—ASH WOODS

6. Spindle — bright pink fruits with orange seeds.
7. Wayfaring tree. Woolly leaves; heads of creamy flowers.
8. Herb Paris. Four leaves—bracts—spread out below flower.
9. Gladdon. Iris with purplish flowers and orange seeds. Also found in woods of beech and yew. Unpleasant smell.



TEACHING NOTES

1. Practical work.—The subject matter of this chapter will have greater value if some practical out-door study can be undertaken. This might take any of the following forms:

I. A STUDY OF WEEDS.—

(a) Make a list of all weeds to be found *either* in the school garden *or* in the children's own gardens. Let the children learn to recognise them.

(b) Look out for these weeds in all their different stages of growth.

(c) Note particularly the means of dispersal and the means of becoming established; e.g., dandelion, feathery fruits, rosette of leaves and long tap root. Do they crowd out other weeds?

(d) Note the distribution of these weeds. What parts of the garden do they inhabit? Is there any connection between their situation and the prevailing winds? Do they flourish on dry or damp, rich or poor soils?

(e) How are they best kept down?

(f) Note whether they are annual, biennial or perennial.

II. A STUDY OF THE MEANS OF SPREADING BY UNDERGROUND STEMS AND BUDS OR CREEPING STEMS OF DIFFERENT KINDS.—

Where the children have little access to plants, this may be more feasible, if the teacher can procure varied material—the commoner the better; e.g., cultivated perennials, and weeds such as creeping buttercup, cinquefoil, clover, daisies, plantains, brambles.

III. STUDY OF A PIECE OF WASTE LAND.—This is especially valuable if it is a freshly opened-up area, such as a road cutting, when the succession of colonists can be noted, but is instructive in any case. Note which plants become "dominant" and

try to account for this. Is there more than one type of dominant plant? How do the plants which occur with less frequency—"subdominant," scattered or rare—manage to establish and maintain their place? Take into account means of pollination and seed dispersal. Try to obtain monthly observations on these lines, and compare the data obtained. If it is not possible to take the children out, but they have access to such a piece of land, their observations can be directed and organised, then collected and discussed.

Incidentally, such a study would draw attention to what is known as the "lair flora," the plants which establish themselves close to man's habitation and by their coarse, vigorous and robust habit are able to combat the evils of dust, chemicals, bruising and trampling and other rough treatment which their situation brings with it. They have an interest of their own, looked at from this point of view—such plants as the nettles, docks, plantains and burdocks, willow-herbs, goosefoot and knot-grass, and amongst the grasses, wall barley, cocksfoot and darnel. Most of them are ready to become weeds if the opportunity occurs, but in their usual habitation of wayside or waste bank, man ignores them because they do no harm, and even perhaps help to bind together and so consolidate the soil in the same way as the sand-dune and salt-marsh plants secure the coast.

2. Exercises.—

(1) In what ways do plants compete with one another?

(2) What checks exist to prevent a particular plant from becoming "lord of creation"?

(3) In what ways does man interfere with and control the growth of plants?

(4) How does a patch of dandelion plants make it difficult for other seeds to grow amongst them?

(5) In what ways does a gorse plant produce young plants?

(6) What damaging effects had heather when introduced into New Zealand?

(7) What happened when watercress was introduced into New Zealand?

(8) How does the Canadian pondweed form new plants?

(9) How does the nuthatch open hard nuts?

(10) How do animals check the spread of plants?

(11) What do you understand by the term "dominant" plants?

(12) What other plants would you expect to find growing in an oak-and-ash wood?

XII. HOW THE BALANCE OF NATURE IS PRESERVED

PART 2. ANIMALS

Introduction.—Many animals produce large quantities of eggs, and many plants a great many seeds, yet on the whole, the numbers of any particular plant or animal do not seem to increase. The common brown rat produces offspring at such a rate that one pair could be the ancestors of 30,000 in one year, and of 48 million million million in ten years, if they all survived.

Though a herring produces thousands of eggs, yet the number of herrings does not increase by thousands every year, in fact, the number remains almost constant.

The struggle for existence.—It was Charles Darwin who first pointed out that all creatures are really fighting for their lives against many dangers, and that the chief difficulty for all of them is to obtain enough food. He called this the "struggle for existence," and explained that in this struggle it was the plants and animals best fitted for their surroundings which succeeded in making a living and producing young. This is called the "survival of the fittest."

The herring, shown in Plate XII., No. 1, is an example of what happens. Herrings throw millions of eggs into the sea each season. Most of them hatch and float in the plankton. Other fish, however, are on

the look-out for such small "fry"—as the young are called—and a great many are eaten.

As they grow bigger, herrings swim and drift in shoals for hundreds of miles, following the movements of the plankton on which they feed. They in turn are followed by other fish, by sea-birds such as gannets, and by seals and porpoises. Man, too, takes a large toll.

The balance of nature.—In this way, through one animal feeding upon another, as well as through lack of food, disease and accidents, a balance is kept between the various forms of life. In some cases, when the numbers of animals increase to a marked extent, some kind of check seems to occur which reduces the numbers again. Look at the grouse in Plate XII., No. 2. This bird inhabits the heather moors of northern Britain. If the birds are not shot, and the numbers increase till they are over-crowded, they are liable to be attacked by an epidemic disease which kills hundreds of them.

A curious case is that of the lemmings, small ratlike creatures of the Arctic region. At times they collect in large companies and march westward until they come to the sea. Then, like the rats in *The Pied Piper* they rush into the water and are drowned.

Increase in numbers.—There is, at times, a great increase in certain races of animals; for instance, of starlings at the present time. Such an increase is especially likely to happen if some change in the surroundings makes new, large food supplies available or decreases the number of enemies. If animals are introduced to new countries where they are freed from their ancient enemies, they sometimes increase and spread in an alarming way. Everyone knows about the spread of rabbits in Australia, where there were no stoats or foxes to keep them down. In New Zealand also they began to be a serious pest, but strict measures were taken in time to check them, such as demanding a penalty of £50 for keeping a pet rabbit, and a tax to pay for putting up rabbit-proof boundary fences.

In the last few years the musk rat, or musquash, shown in Plate XII., No. 3, has been introduced from America into some parts of England, and has escaped and begun to spread. As this animal burrows in the banks of rivers, it causes the banks to crumble and fall in, and so not only may be responsible for accidents, but is a serious danger to the water supply.

These examples show the danger of man's interference with the natural balance of life.

The struggle between near relations.—Darwin pointed out that the struggle for existence was likely to be most severe between nearly related forms, which would need similar conditions and especially would compete for food. Plate XII., Nos. 4 and 5 show some examples.

The brown (or grey) rat came to England in merchant ships from the East in the early 18th century. It almost exterminated the native black rat. This was a good thing, for the black rat carried the plague, but as the brown rat, too, carries disease, as well as destroying thousands of pounds worth of food and other property each year, it is an almost equally dangerous pest.

The grey squirrel was brought a few years ago from South America, and spread through this country, where it is killing the native brown squirrel, as well as competing for its food. The brown squirrel does little harm, but the grey squirrel is a marauder that destroys fields of young peas, fruit, and some people say, eggs and young chickens.

Wherever the song thrush and its cousin the missel thrush exist together there is a tendency for the song thrush to decrease in numbers. In some parts of Scotland the song thrushes have disappeared altogether. This is probably chiefly due to their competing for the same food. The missel thrush seems to be the more vigorous.

Defence.—We have referred in an earlier chapter to the value of various structures and habits in helping animals to defend themselves. In particular teeth, claws, hoofs and horns, a hard outer covering or a shell into which the animal may retreat, will frequently help it against an enemy. The value of feeding in herds was also mentioned. Any effective method of defence helps to preserve the race and so keeps the balance of life undisturbed. It remains to mention a few peculiar methods of securing safety.

Plate XII., No. 6 shows a skunk, a native of America which maintains itself against attack by giving out so powerful and offensive a smell that few animals will approach it. Our own shrews have a similar defence. Cats and other animals will not eat them, though it is said that owls will kill them.

Plate XII., No. 7 shows a turtle. The turtles and tortoises are reptiles, and are peculiar amongst vertebrates in having a protective outer shell into which they can withdraw head and legs. As the shell is extremely hard it is an excellent defence.

Plate XII., No. 8 shows an armadillo, a South American insectivorous beast protected by horny plates formed from a peculiar type of hair. The name, given to it by the Spaniards, means the little armoured one.

Plate XII., No. 9 shows a sloth, also a native of South America. It lives amongst the branches of trees, and will remain for hours hanging from a branch, or crawling sluggishly along in search of food. On its long, coarse hair grows a small green plant, like the green scum seen on tree trunks. The lack of movement and the protective green colouring make it easy to mistake the sloth for a branch covered with coarse hanging moss or lichen, and so its enemies pass without recognising it.

Conclusion.—

(1) We can now see that the balance of nature is due to the struggle for existence which is always going on, so that even if certain races of plants or animals increase

and become widely spread, a check will come in some form.

The conditions which encourage a race to multiply and survive are:

- (a) Good food supply.
- (b) Freedom from enemies and other dangers.
- (2) It is dangerous to introduce animals into a new country, because the balance of life is upset, they are freed from their natural enemies, and very often become a pest.
- (3) Animals which are nearly related will struggle most severely together, because they need the same things, and there may be too little to go round.
- (4) Means of defence, whether in habit or structure, may be important in helping a race to survive.

TEACHING NOTES

1. Practical work.—

I. PLANT PROPAGATION.—

(a) It is difficult to suggest any work on animals in connection with this chapter, but an attempt might be made to estimate the number of seeds produced by some common plants; e.g., antirrhinum, garden nasturtium, sunflower or other composite, by letting each child in the class count the seeds of one or two flowers, then finding the average. The same thing might be done with wild flowers; e.g., bluebell.

(b) Some of the children might be interested in trying to find out, in their own gardens, what proportion of flowers of any particular kind produce seed, and how many, by counting the flower heads before pollination has taken place, and then the number in which seed forms.

II. THE BALANCE OF NATURE UPSET BY INTERFERENCE.—In any given small area, such as a part of a garden, look out for *interference* which may have destroyed

plants or animals (including accident); e.g., eggs and young birds fallen from the nest, plants attacked by slugs, snails and caterpillars, fruit and berries attacked by birds, wasps, flies, and so on.

2. Exercises.—

- (1) What is meant by the "struggle for existence"?
- (2) What is meant by the "survival of the fittest"?
- (3) How is it that the sea is not over-run with herrings, in spite of the fact that millions of herrings' eggs are laid each year?
- (4) How is the balance of nature preserved in the case of (a) grouse, and (b) lemmings?
- (5) Why did rabbits increase greatly in Australia when introduced into that country?
- (6) Why is it undesirable that the muskrat should be allowed to increase in numbers in England?
- (7) Why is the struggle for existence most severe between nearly related forms of creatures and plants?

PICTURE SUMMARY

THE STRUGGLE FOR EXISTENCE

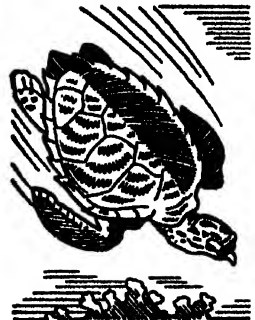
1. Herring. Produces thousands of eggs.
2. Grouse. Lives on heather moors.
3. Musk rat. Burrows in banks of streams.
4. Brown rat. Ousted native English black rat which carried plague.
5. Missel thrush strives with song thrush ; grey squirrel with brown.



9



8



7

MEANS OF PROTECTION

6. Skunk—powerful odour.
7. Turtle — coat of armour-plating.
8. Armadillo—coat of armour.
9. Sloth — camouflaged by plants growing on hair.



6



1



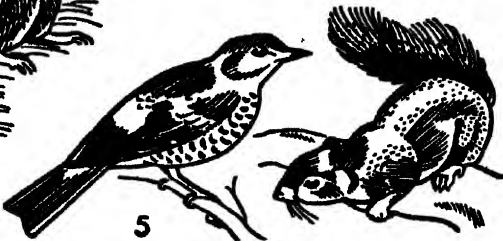
2



3



4



5

(8) Tell what you know about the struggle for existence in: (a) the rat family, and (b) the squirrel family.

(9) Why are there no song thrushes in some parts of Scotland?

(10) Make a list of the means of defence of various animals.

(11) What means of defence has a skunk?

(12) What is the meaning of the word *armadillo*, and how is the creature well named?

(13) How does a sloth protect itself?

(14) What are the two chief conditions which encourage a race to multiply?

XIII. LIVING THINGS NEED A COVERING

Introduction.—When we speak of an animal's covering, we at once think of fur or feathers, yet there are several other kinds, all produced by the skin. Its covering may keep an animal warm, or may serve some other purpose. The skin of an animal, or the surface layer of a plant, is in itself a kind of covering, and as it is the basis of all other kinds we will first consider this.

Animals with no skin.—We have previously said that the simplest forms of animal life originally existed, and still exist, in water. The most primitive known animal is called amoeba. It is a tiny speck of jellylike living substance, which lives on the mud at the bottom of ponds, and moves about by changing its shape and flowing along, as shown on Plate XIII., No. 1. It can also take in food by flowing round it. This is possible because there is no firm surface layer. This gliding movement is, however, slow and limited. To obtain any speed, a definite shape is necessary, and the body must be bound together by an outer skin. This is, therefore, the first value of a covering. All but the very lowest animals have a skin.

Protective covering.—The surface layer of an animal may be hardened so that it protects the animal in various ways.

Animals which live on the seashore are often buffeted by waves and wind, which hurl stones and sand against them; or in the sea they may have to resist the pressure of a great weight of water. The skin fre-

quently produces hard plates which help to protect the body. The lobster, in Plate XIII., No. 2, has a horny shield on its back, while its limbs are encased in horny tubes, further hardened by limestone. The starfish in Plate XIII., No. 3, has a sort of armour-plating of small stony discs and spines, while the mussel in the same picture shows another kind of protective covering—a shell made in two halves, or valves, hinged together. Plate XIII., No. 4 shows another kind of shell, made in one piece, spiral in form. The mussel and whelk shells are grown by a special part of the skin called the shell gland.

1. *Protection against enemies.*—All these protective coverings may serve in yet another way, by protecting the animal from being eaten. Unfortunately for crabs, mussels and many other animals, this protection is only partial, for a great many of their enemies have developed special weapons to deal with them. Some fish have teeth which can crunch the shells. Starfish (Plate XIII., No. 3) can force open the shells of mussels and oysters with their powerful arms, and the whelk can bore holes through the shells with its gimletlike snout; see Plate XIII., No. 4.

2. *Protection on land.*—In water the conditions do not change so much as on land. The temperature does not suddenly become very hot or very cold, and the skin of water animals is always kept moist. The greatest difficulty for a water animal coming to live on land is the dryness of the air

which affects its skin and its breathing. It is exceedingly important that the skin shall not become dried up. The naked skin of a frog or an earthworm compels these animals to live in damp places only, for the skin must be kept moist, partly because the animals breathe through it. The first vertebrate animals to inhabit the dry land, millions of years ago, were reptiles, and this was possible because they had a covering of scales which protected the skin against dry air. At the present day the reptiles are represented by lizards (Plate XIII., No. 5), snakes, tortoises and turtles, alligators and crocodiles. When they first came out of the sea and colonised the land there were many more kinds, some of them gigantic, such as the iguanodon in Plate XIII., No. 6. These have now died out.

3. *Protection against cold.*—It is important for animals living in temperate and cold climates that they shall not suffer from the effects of cold, that is, lose heat. The heat from the bodies of animals is always passing into the air from the surface of the skin. The higher animals have various ways of preventing loss of too much heat, for cold would kill them, and one of the most important safeguards is a covering of fur, wool, hair or feathers.

If you hold a steel poker in a fire, the heat runs along the metal, and the end you are holding gets hot; but if you hold a stick in the fire, though it will begin to burn, the end you are holding will remain cool for a long time. Steel is a good conductor of heat, wood is a bad conductor. Fur and feathers are bad conductors, and therefore do not allow heat to escape. They also enclose a layer of air, another bad conductor, and so keep the body doubly warm. In very cold weather small birds puff their feathers out so that they look quite plump, but in reality the feathers are enclosing more air than usual and so helping to keep the bird warm.

Plate XIII., No. 7 shows a mouse, which like all mammals has a covering of hair—fur and wool are a kind of hair—and a duck, which has under the smooth covering

feathers a very thick layer of down. All birds have soft down as well as the covert or contour feathers.

4. *Protection against wet.*—Most of these coverings also allow water to run off.

5. *Protection against heat.*—Arabs always wear a cloak and hood to protect them from the great heat of the sun, and in the same way the fur of animals protects them in hot countries.

6. *Protective colouring.*—Many animals are difficult to see against their natural background, for instance, hares or partridges in a furrowed field. This is due to the colouring of the coat. It is particularly effective if there is a pattern of spots or stripes to break up the surface, or if the underside is light in colour, to counteract the shadow thrown on the ground.

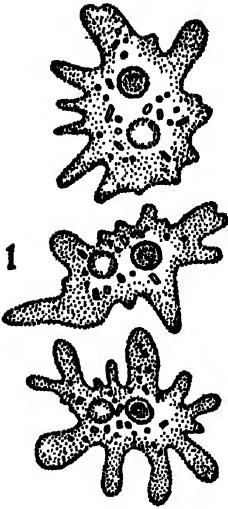
Coverings of plants.—Plants are covered by a surface skin, which is slightly thickened on the outside, preventing loss of water. Some plants have special outgrowths from the skin to help this. Plate XIII., No. 8 shows the edelweiss, which grows high up on rocky mountains, where it is exposed to heat, cold and dry air. It is protected from all these conditions by a thick growth of white hairs, so that it looks exactly as if it had been cut out of a piece of blanket. Many plants in dry places are protected by hairs. Evergreens such as holly have a very thick, tough skin which prevents loss of water. The same coverings also prevent water from soaking in, after rain or snow.

As plants grow older the skin of their stems becomes thickened with cork, and in trees and shrubs which grow year after year, new layers of cork are added inside the older ones until at last a thick bark is formed. As the trunk grows thicker, the outer layers of bark split, and the new light brown cork can be seen in the cracks.

The bark prevents the trunk, branches and twigs from losing too much water, from getting wet, and to some extent from losing heat. Plate XIII., No. 9 shows how thick bark grows.

PICTURE SUMMARY

COVERINGS OF ANIMALS IN WATER

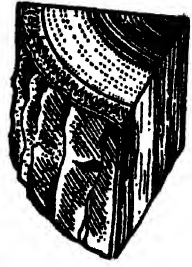


1. Amoeba. No covering ; shape changes.

2. Lobster—hard plates.

3. Starfish—stony plates.

4. Whelk—single stony shell. Note snout for boring holes in shells.



COVERINGS OF ANIMALS ON LAND

5. Lizard—scales.

6. Iguanodon—extinct reptile.

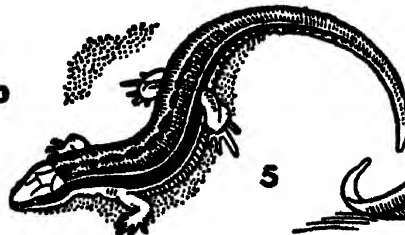
7. Duck — contour feathers and down. Mouse — fine hair.



COVERINGS OF PLANTS

8. Edelweiss — thick white hair.

9. Bark of tree is non-conducting.



Special pores, called *lenticels*, remain open in the bark, taking the place of the stomata. In the autumn the lenticels are plugged with cork, thus preventing water vapour from escaping, for a tree cannot afford to lose water in the winter. The plugs are raised light brown patches, which you can see and feel on horse chestnut twigs.

Conclusion.—We have seen that a covering, in addition to the skin, is important in the following ways:

- (1) A hard shell protects against blows and pressure, and against enemies.
- (2) A hard shell or hardened skin prevents land animals from drying up.
- (3) Fur and feathers protect against cold, heat, and wet.
- (4) Coat colour may render animals invisible.
- (5) Plants are protected by their skin against loss of water.
- (6) Plants may have special tissues which prevent loss of water; e.g., specially hard leaf surfaces, hairs, bark.

TEACHING NOTES

I. Practical work.—

I. ORAL DISCUSSION.—Discuss the substances used as coverings for animals and plants, and notice how man has made use of many of them for similar purposes; e.g., wool, fur and feathers for warmth; leather for warmth and to keep out water, especially for shoes, leggings and coats; cork for warmth and to keep out water,—for instance cork soles inside shoes, and for mats, because cork is a non-conductor of heat.

II. TO PROVE THAT COVERING PROTECTS AGAINST WET.—(a) Try wetting cork, feathers, wool, by placing in water. Note how difficult this is, partly because of their own nature and partly because of the air they hold. Note the small air bubbles which can be seen under the water.

(b) Pour water on the surface of various materials with rough, hairy surfaces and smooth surfaces, and note whether it runs off. Try also cork and feathers, and hard, shiny leaves such as holly. If available, try wetting hairy leaves, such as the under side of coltsfoot leaves.

III. EXAMINATION OF SEA CREATURES.—Obtain some dead prawns or large shrimps from the fishmonger, and

let the children examine the arrangement and fixture of the armour-plating on body and legs. Notice how resistant it is to blows, whereas the harder armour of a crab can easily be cracked by a sharp blow.

2. Exercises.—

- (1) What is *amoeba*?
- (2) How does amoeba take in food?
- (3) What is the first value of having a covering?
- (4) Of what use is the hard covering of sea animals?
- (5) What forms of protection have (a) a lobster, and (b) a starfish?
- (6) What is the difference between the protective covering of a whelk and a mussel?
- (7) For what purpose especially does a land animal need a covering?
- (8) Why do frogs and earthworms live in damp places?
- (9) Make a list of reptiles living to-day.
- (10) Why do creatures living in temperate climates need a protective covering?
- (11) What is meant by a "bad conductor" of heat?
- (12) Why do Arabs wear cloaks and hoods?

(13) Make a list of animals whose covering is coloured in such a way that the creatures are difficult to see in their natural surroundings.

(14) Write what you know about the protective covering of the plant *edelweiss*.

(15) What two purposes does the thick, tough skin of the holly serve?

(16) How is the bark of a tree formed?

(17) What are *lenticels*?

(18) What purposes does the bark of a tree serve?

XIV. MOVEMENT AMONG PLANTS

Introduction.—When we contrast plants and animals, one of the first differences we think of is that plants do not move about, though some of the very lowest and smallest plants living in water—plants resembling the green scum growing on tree trunks—can swim about like animals. Most plants, however, make some movements of their leaves and stems as they grow; for instance, as leaves unfold, their stalks lengthen and turn outwards, carrying the leaves into the light.

Flower movements.—Most flowers are extremely sensitive to sunshine, and some flowers open only for a few hours in the day, or will not open at all if the day is cloudy or rainy. In the sunshine the nectar, from which bees make honey, flows freely, especially if there is no wind. The flowers are open usually when the insects which carry their pollen are abroad. Thus John-go-to-bed-at-noon shown on Plate XIV., No. 1, is open in the morning only, while moth-pollinated flowers, like the evening primrose, open at dusk. The daisy is the "day's-eye"; it opens and closes with the beginning and the end of the day.

There are flowers which turn always towards the sun. The sunflower, Plate XIV., No. 2, follows the sun, the large head of minute, crowded flowers turning on its stalk as the earth moves through its orbit.

Many flowers adopt a series of positions as their stigmas and stamens become ripe, which enables an insect to see at once whether they are ready for a visit. Clover

and bluebell flowers bend downwards after they have been pollinated, and insects do not waste time on these flowers.

Leaf, stem and root movements.—It is important that leaves shall be able to alter their position after the stalk has grown, both to obtain light and to avoid loss of too much water. In many cases, the base of the leaf-stalk is swollen and by changes in the water supply, slight movements can take place in this cushion, resulting in much larger movements of the leaf blade. This is just as when you make a circular movement with your arm, the hand describes a much larger circle than the shoulder. In some compound leaves (for instance, clover), the cushions are at the base of the leaflets. Clover makes very definite sleep movements, both at night and in certain weather conditions, closing the leaflets down against the stem like an umbrella and so checking loss of heat and water vapour from the under side.

Twining stems move their tips in a wide spiral until they touch some support, when the stem tightens on it and as the movement continues, twists round it. The convolvulus, Plate XIV., No. 3, moves its stems in the opposite direction to the hands of a clock—as the plant is looked at from above. The white bryony stem moves in a clockwise direction.

Other climbing plants have leaves which are sensitive to contact, so that as soon as they actually touch a support they begin to twist round it, though they made no

movement previously. Wild clematis (traveller's joy) does this. Tendrils, which behave in the same way, are leaves which have lost their blades. Vetch and sweet pea are examples.

Sometimes the roots of plants make movements apart from growth which help to fix the plant more firmly. New crocus corms, for instance, are formed each year on top of the old ones, so that unless something were done about it, they would very soon be growing above the ground. So certain thicker roots are formed which, having finished their growth in length and fixed their tips, begin to contract, and in so doing, drag the new corms lower into the ground. These roots can easily be recognised by their thickness and by the wrinkles which form as they become shorter. They are shown in Plate XIV., No. 4.

Plant dispersal.—It would be very useful to plants if, when a district is getting overcrowded, they could uproot themselves and go away to find a new home. They cannot do this, but the next best thing is to send their young folk exploring. So most plants have some means of dispersing their seeds, or—in the case of the lower plants like the seaweeds, horsetails, mosses and ferns—their spores, which are minute hard cases enclosing living substance capable of growing into a new plant.

1. *Explosive mechanism.*—Sometimes the parent plant helps the young to start their journey by shooting them out, like a bullet or torpedo. This is due to sudden contraction of the dry fruit, and is carried out in different ways. You can hear the small, sharp explosions of gorse pods or balsam fruits opening, but the tiny violet capsules make no audible sound. The cranesbills or wild geraniums of various kinds swing each section of the fruit upwards and outwards, and the seed drops out and is hurled away, as shown in Plate XIV., No. 5.

2. *Wind dispersal.*—A great many plants rely on the help of the wind in carrying their seeds away. The poppy, Plate XIV., No. 6, is gently swung backwards and forwards on

its long stalk, and the ripe seeds are jerked out of pores which open just under the "lid." The numerous seeds are exceedingly fine and light, and so easily carried a long way, like a cloud of pepper shaken out of a pot.

3. *Plumed fruits.*—A feathery plume is a great help in securing wind dispersal. Those shown in Plate XIV., No. 7, the traveller's joy or wild clematis fruit, are formed from the long styles by further growth of the silky hairs which cover them.

Dandelions have a circlet of hairs on a long stalk, called a pappus; while in John-go-to-bed-at-noon each hair is branched. The handsome "clock" gives this plant its other name, goat's beard. Thistle fruits are like little shuttlecocks, and after a time the fruit at the bottom, too heavy for the airy pappus, drops away. In all these cases, the pappus is formed from the modified calyx of each floret, which instead of being a ring of green leaves, is reduced to hairs. After pollination these hairs grow much longer until they are capable of bearing the weight of the fruit.

4. *Winged fruits.*—In many fruits some kind of wing helps in dispersal. This is either an expansion of the fruit wall, as in ash, sycamore, maple and elm, or it may be a bract, that is, a leaf formed below the flower, which has become hard and firm, as in the lime shown in Plate XIV., No. 8.

5. *Dispersal by animals.*—Last of all, animals may carry away seeds, either by eating the fruits and shedding the seeds, as birds do with juicy berries; or by carrying them in their coats or even attached to their feet. Many of the common hedge fruits are carried in this way. They are generally rough, or provided with hooks which become tangled in wool or fur, and we call them burrs. One example is shown in Plate XIV., No. 9, the wood avens. Here the hooks are formed from the styles of the flowers.

The burdock has a collection of nutlets surrounded by stiff, bristly hairs, the whole enclosed in several rows of bracts, forming

what is called an involucre. These bracts are curved backwards at the tips to form stiff hooks, and sheep, rabbits, dogs or people brushing against them are sure to carry away a large number of heads, which gradually loosen, then the fruits drop out.

The goose-grass which clammers in every hedge owes its name of cleavers to the small hooks which grow from the fruit wall in a dense mass, and the agrimony has a circlet of similar hooks. All these are very efficient means of scattering the seeds.

Conclusion.—We now see that though plants cannot move about like animals, yet they have a wide range of movement.

(i) Flower movements either bring them into suitable positions for pollination, or

show insects whether they are worth a visit.

(2) Leaf and stem movements may be connected with:

(a) Obtaining light.

(b) Checking the giving off of water vapour.

(c) Supporting the plant as in climbing plants.

(3) Root movements may occur which anchor the plant more securely into the ground, as in the crocus.

(4) Seed and spore dispersal requires movement. This may be brought about:

(a) By explosive mechanisms, as in gorse, violet and cranesbill.

(b) By wind, helped by plumes or wings.

(c) By animals, when the fruits are usually hooked or succulent.

TEACHING NOTES

1. Practical work.—

I. CHARTS.—Make a classroom chart on which observations on the movements of flowers and leaves may be recorded. Note the time of day and the weather conditions; e.g., in wet weather, damp or foggy days, the leaves of many trees hang down (horse chestnut, false acacia).

II. CLIMBING PLANTS.—If possible, grow some climbing plants so as to observe the method of climbing; e.g., garden nasturtiums climb by their leaves, sweet peas by tendrils, convolvulus by the stem. Obtain also specimens of as many varieties of climbing plants as possible, and let the children make labelled sketches of the organs concerned.

III. SEED DISPERSAL.—This is also a good opportunity to obtain varied material for revising the ways and means of seed dispersal. Experiments might be tried (or repeated, if previously tried), on the effective-

ness of various methods of wind dispersal by cutting off parts of wings or plumes, and blowing the seeds—or fruits—by means of bellows, or fanning them, to see how long and how far they will float in the air. Encourage children to notice, too, definite instances of seeds and seedlings being found at some distance from any plants of the same kind. This is most obvious with tree seedlings, but other cases may be looked for.

2. Exercises.—

(1) What sort of movements can most plants make?

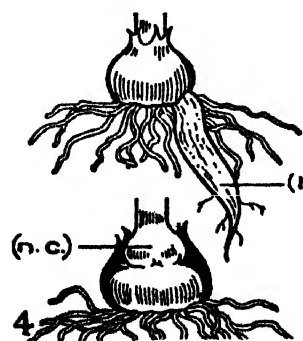
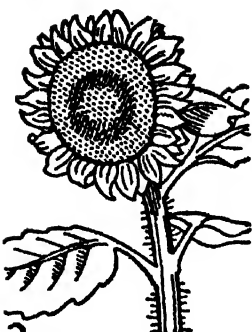
(2) When does the nectar of flowers flow most freely?

(3) What is the value of the evening primrose opening at dusk?

(4) Why is the sunflower well named?

(5) What do some flowers show by altering their positions before and after they have been pollinated?

(6) Why is it necessary for a leaf to alter its position?



PICTURE SUMMARY

FLOWER MOVEMENTS

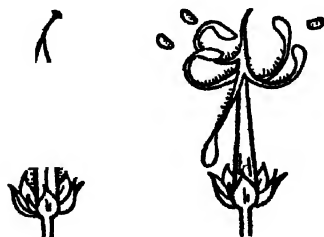
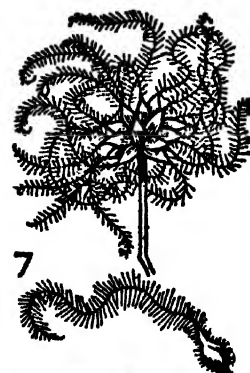
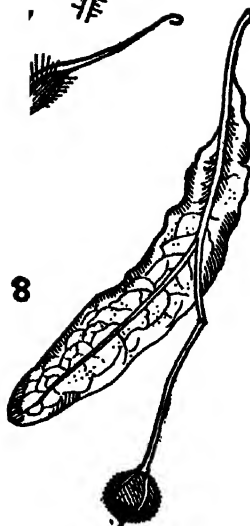
1. John-go-to-bed-at-noon. Flower head open and closed. Note involucre of bracts.
2. Sunflower follows sun by movements of stalk.

STEM AND ROOT MOVEMENTS

3. Convolvulus stem twines anti-clockwise round twig.
4. Crocus corm with thick contractile root (r).

DISPERSAL OF SEEDS AND FRUITS

5. Cranesbill. Immature fruit; ripe fruit shooting out seeds.
6. Poppy head. Seeds scattered through pores.
7. Traveller's joy. Plumed fruit. Each plume formed from a style.
8. Lime fruit. Bract forms wing.
9. Wood avens fruit. Hooked styles which catch in coats of animals.



(7) What purpose does the cushion at the base of the leaf stalk of certain leaves serve?

(8) In what way does the stem of the convolvulus move?

(9) What is a *tendrill*?

(10) Draw from memory the climbing organs of three plants and say how they climb.

(11) Draw from memory a crocus corm to show how anchorage is achieved.

(12) What are *spores*?

(13) Make a list of plants which disperse their seeds by shooting them out.

(14) How does the poppy disperse its seeds?

(15) What is a "plumed" fruit? Give some examples.

(16) How are the "wings" of the following two fruits formed: (a) sycamore, and (b) lime?

(17) How do animals and birds help in the dispersal of seeds?

(18) What is an *involucre*?

(19) Make a list of plants which depend on animals to disperse their seeds.

XV. TRAVEL AND TRANSPORT AMONGST ANIMALS

Introduction.—We have seen that the power of movement amongst animals is important in helping them to obtain food. It may also help some animals to escape from their enemies, which are thus deprived of food. Even the migration of birds to warmer climates is chiefly of value because insects are more plentiful there, and because it lessens the competition for food in the place they leave.

Animals roam in search of food.—There are certain animals which travel long distances searching for food. They stay in each place till it is exhausted, and then move on again. These roaming animals usually collect together in herds, under an experienced leader who knows all the likely places and will not lead them into danger. Since the young must move with the herd, they can usually run beside their mothers almost as soon as they are born. The African elephant shown in Plate XV., No. 1 travels in this way for hundreds of miles through the forests, feeding on succulent branches as it goes. The bison, shown in Plate XV., No. 2 is a good example of the same habit in a colder climate. Herds of

bison used to roam over the prairies of North America grazing on the rich pasture, until Indians and white men exterminated them. They are now found only in special preserves, where they are protected.

The habit of roaming in large companies is common amongst many of our small British birds. In the winter chaffinches form large flocks, always of one sex, Plate XV., No. 3. They are sometimes joined by sparrows and other finches, and they move from stubble-field to rickyard, where grain and seeds are plentiful. Great tits haunt the woods in flocks during winter in the same way.

Whales are constantly on the move, usually in numbers, travelling many miles as they follow the fish upon which they feed. Most of the toothed whales, of which the porpoise shown in Plate XV., No. 4 is one of the smallest, feed on fish—though some of the larger ones feed on cuttle-fish also—and many fish follow the ocean currents for food.

Migration.—Some animals make definite seasonal journeys, usually connected with breeding, which we call migrations. Birds

which in the autumn leave our shores for the south, return in the spring to their breeding places. In the spring, too, the lovely painted lady butterfly appears on the south coast, having travelled over the sea from North Africa.

Among fishes, salmon and eel are migrants. Salmon leave the sea and ascend the rivers, where the eggs are hatched, and here the young fish live for a year or more, before descending to the sea.

Eels are even more interesting. They spawn in the sea, and the eggs hatch into glassy, ribbonlike little fishes. These have no common name, but their scientific name is *leptocephalus* which is Greek for "a thin or narrow head." Then the form of the body changes, shrinking and becoming round and thin like a bit of wire. It is now called an *elver*. Plate XV., No. 5 shows both stages. Millions of elvers make their way from the depths of the sea to the mouths of rivers, which they ascend. Then they leave the rivers and wriggle through damp grass to ditches and ponds, sometimes isolated far from any other water. Here they stay for several years, growing to their full size.

Now comes an even stranger part of the story. The full grown eels make their way down to the sea again. Far out in the Atlantic Ocean, the bed of the ocean drops suddenly in a steep slope, called the Atlantic Shelf. It is here that the eels from all the fresh water rivers and ponds in the world collect in order to lay their eggs, or spawn.

It is sufficiently mysterious that the baby elvers should swim from the deep abysses of the sea to the rivers, but it is impossible to understand how, from hundreds of miles away, they should find their way back to their birthplace again.

Swarming of bees.—A peculiar instance of mass movement is the swarming of a hive of bees. This usually takes place either when a hive is becoming over-crowded, or when a number of "princesses" are ready to leave the cells in which they have pupated, and

change into queens. The queen leaves the hive, accompanied by a large body of workers, though some must remain to attend to the hive and the new queen. The queen and her attendants fly to some place—a tree, a telegraph pole, a lamp-post—where they cling together and rest. At this point the bee-keeper brings a skip which he places beneath the swarm to capture it, but if this is not done, they will presently sail away, perhaps for miles, till they find a suitable hollow tree in which they can set up a new home.

Transport.—Transport means "carrying across," and we should not expect to find many animals which avail themselves of any kind of carriage. There is an anemone shown in Plate XV., No. 7 which has a kind of one-horse cart, for it rides on the back of a whelk shell to which it attaches itself. It chooses, however, shells which are already occupied by hermit crabs and so, when the hermit crab walks abroad, the anemone rides in state on its chariot drawn by the crab.

1. *Accidental transport.*—It is probable that the distribution of animals in various places has been brought about in some cases by accidental transport by plants, by animals and man. Sometimes tree trunks floating in the sea have been known to carry small animals, such as snakes, in holes, and it may be that some of the animal colonists of distant islands have arrived in this way. From time to time snakes are found in cargoes of bananas brought to our shores from tropical countries. It is possible that, under suitable conditions, they might establish themselves in new countries, as the brown rat did here in the 18th century. Plate XV., No. 8 shows a scorpion, a poisonous relation of the spiders, which dwells in dry or desert regions. Its bite, like that of a tarantula spider, can kill a man. Both have been found in cargoes of logwood from hot countries.

2. *Intentional transport.*—Sometimes, as we mentioned in another chapter, animals

are intentionally introduced by man into new countries, where he wants to cultivate them for his own purpose. Rabbits in Australia are the best known example, and warn us of the danger of such a proceeding; but occasionally it may be of value, if properly controlled. Both white and red clover were introduced into Australia and New Zealand as fodder for animals, but they could not set their seed until hive bees and humble bees respectively were also imported to bring about pollination. This experiment succeeded, and we now get Australian honey into the bargain.

Parasites.—Parasites are animals or plants which live upon others, so naturally they are transported wherever their *hosts* go, and from time to time, they are conveyed to new hosts. External parasites will have little difficulty in transferring themselves from one animal to another. Plate XV., No. 9 shows a flea, which has specially modified legs which act as a spring board to enable it to jump a long distance.

Many parasites, however, live inside the bodies of their hosts, so that the problem of transference presents a difficulty which is solved in many curious ways. The parasite which causes malaria is a very minute animal which inhabits the blood of a particular gnat or mosquito. If an infected mosquito bites a man, then the parasites

are injected into his blood, for at a certain stage in their life they all collect in the mosquito's saliva. It is essential to the completion of their life cycle that they shall spend one stage in the mosquito and one in a man. If a mosquito should bite an infected man, then it sucks in, with his blood, another stage of the parasite, and so the vicious circle is complete.

Tape-worms must inhabit two animals, usually both mammals, to complete their life history. A very common tape-worm spends one stage in a rabbit and the other in a dog. The dog eats, perhaps, the liver of a rabbit containing tape-worms in the form of little bladders, and they develop into the "tape" shape in the dog's bowel. Afterwards they are dropped in a field, and may be eaten by a rabbit with the grass. In this way they are passed on from one to the other.

Conclusion.—Summing up, we may note the following points:

- (1) Animals travel widely in search of food—elephants, bison, whales.
- (2) Their travels may take the form of regular migrations connected with breeding—birds, salmon, eels.
- (3) They may be transported by other animals or man.
- (4) Parasites need to be transferred from one host to another.

TEACHING NOTES

1. Practical work.—Some definite observational work on the movements of birds in the district might be attempted by means of classroom charts on which any data may be entered. For instance, the first appearance of particular birds in each child's garden or in some place passed on the way to school, the first time their song is heard, cessation of song and disappearance. Flocking and flights of birds, such as house sparrows, starlings,

pigeons, rooks, plovers, magpies, should be noted, and where they are seen feeding.

2. Exercises.—

- (1) What do you understand by the term *migration*?
- (2) What is the value of migration of birds to other countries?
- (3) Name a migratory insect, and say from what country it comes.



1



2



3



4

PICTURE SUMMARY

ANIMALS IN SEARCH OF FOOD

1. African elephant. Roams forest and grassland.
2. Bison. Used to roam N. American prairies.
3. Chaffinch. In winter, separate sexes band together in flocks.
4. Whales travel miles to follow food drifting in ocean currents.

MIGRATION

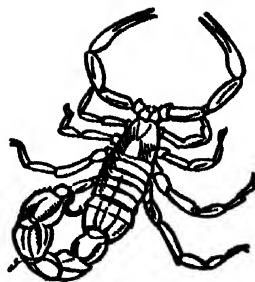
5. Painted lady butterfly flies across sea from N. Africa.
6. Eels spawn in deep waters off American coast. Illustration shows transparent first stages, and elver which is as thin as wire.

TRANSPORT

7. Anemones sometimes attach themselves to hermit crabs' shells and are carried about.
8. Scorpions sometimes arrive in England in cargoes of logwood.
9. A flea springs by means of long hind legs.



9



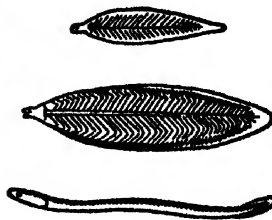
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7



5



6

(4) Make a list of all the animals you can think of which roam in search of food.

(5) In what way is the salmon an interesting fish?

(6) Where do eels lay their eggs?

(7) What is a *leptocephalus*?

(8) What is an *elver*?

(9) How is it that eels are often found in isolated ponds far in the country?

(10) What happens after eels return to the sea?

(11) At what times do bees swarm?

(12) How does it help anemones to be carried about by other creatures?

(13) What is a *parasite*?

(14) Name two parasites, and say how they pass from one host to another.

XVI. LIVING THINGS MUST HAVE YOUNG

PART I. PLANTS

Introduction.—All plants and animals reach a point beyond which they can grow no more—they are “grown up”—but there is one way in which their growth can be continued. They can produce young, and when the parents die, the race does not die with them, for it is carried on by their children.

Producing young by vegetative means.—The lowliest plants and animals continue their growth when they have reached full size by dividing into two. In this case one cannot say they are parent and child, for the halves are equal, both in size and age. In most cases, however, only a small portion of the parent's body forms the young one, or offspring, which starts life afresh. There are some plants in which this happens by the breaking away of a portion. Plate XI., No. 3 shows a piece of Canadian pondweed which has snapped off from the parent plant and floated away. In a few days roots begin to form near the broken end, while the stem goes on growing from the bud at the tip. Later, new branches will be formed from the stem also.

Many plants will grow like this if slips are cut off or pulled away and planted, though it will not occur without man's help. Gardeners call this “striking cuttings” and obtain many new plants in this way—for

instance, chrysanthemums, and geraniums, Plate XVI., No. 1.

1. *Buds.*—A much commoner way of forming young ones in nature is by the separation of buds which will grow up into new plants. These buds may be of special kinds.

2. *Bulbs.*—A bulb is a kind of bud in which the tender young folded leaves and flower are protected by wrappings, formed from the green leaves of former years. The lower part of the previous year's leaves becomes filled with food for the bud, while older leaf bases remain as the scaly outer coat, when all their food supply has been used. All these leaves grow from a thick, flattened stem, which also bears the bud. When the bulb is planted, this stem first produces roots, which seek water and also hold the bulb firmly upright like tent ropes. Then the bud unfolds, sending green leaves above the soil, and at last, from the middle of them springs the flower. Plate XVI., No. 2 shows the bud and protective leaf bases of a daffodil bulb.

In Plate XIV., there is a picture of a crocus corm, which is similar, except that the stem is much thicker and all the leaves are thin and scaly. Notice the new corms growing as a special kind of bud from the stem of the old one.

3. *Bulbils.*—The lesser celandine forms another special kind of bud, called a bulbil. This is a small oval body, quite hard and smooth, which contains a store of food.

Bulbils grow just above where a leaf joins a stem, in what is called the *axil* of the leaf. When the green parts of the plant wither the bulbils break off and sometimes roll some distance away. Very early in the spring, as they lie on or just under the soil they sprout and form first a root or two, then a small leaf, and at last, a complete new plant. The food in the bulbil is used up as the plant grows. Plate XVI., No. 3 shows what these bulbils look like.

4. *Runners*.—Many plants form new ones by putting out stems which lie on the surface of the soil, and end in a bud. Where the bud presses against the soil it becomes anchored by roots, then it unfolds and forms a small new plant. In time the stem or runner, may rot away, so that the new plant becomes separate from the old one. The strawberry (Plate XVI., No. 4) and violet both form young ones in this way.

5. *Underground stems*.—Sometimes, instead of running on the surface, new stems run underground for some distance. This is a very good way of continuing the growth of the parent plant, and very common. The advantage is that the bud on the end of the stem is protected by soil throughout the winter from cold, frost, or dry air. In the spring the end bud (called the *terminal* or *apical* bud because it is at the apex of the stem) turns up and grows above the soil, at the same time forming roots. Many of our garden plants increase in this way, as do many weeds. It is a habit which causes them to spread widely and makes them difficult to uproot.

Such plants, spreading by means of stems and buds, are called *perennials*, and this method of increasing is called *vegetative propagation*. The example in Plate XVI., No. 5 is the common goutweed or ground elder, found in shady places.

Producing young by means of spores.—The methods of increase just described may be very successful in establishing a colony of plants which crowd out all others, but

there is no provision for sending them farther afield to new homes, so most plants have also some means of dispersal, or scattering. In the lower plants, such as the seaweeds, moulds, fungi, mosses and ferns, this is brought about by means of exceedingly minute particles of living matter, encased in a hard outer coat. These are called *spores*. The outer coat protects them until they are safely lodged in some damp, sufficiently warm spot, where they can germinate. Each spore is capable of forming a new plant. They are generally contained in a special vessel or organ formed by the parent plant, such as a toadstool, puffball (Plate XVI., No. 6) or the spearlike head called a capsule, in the mosses, or the dark spots on the backs of fern leaves. They are scattered chiefly by wind or water, but sometimes animals help.

Producing young by means of seeds.—The highest plants produce flowers which carry seeds inside them. In the centre of a flower is the *pistil*, and in the lowest part, called the *ovary*, the young seeds are formed. They are called *ovules*. Before they can ripen into seeds, the pistil has to receive pollen, preferably from another flower. This is deposited on the tip of the pistil, called the *stigma*. Each grain of pollen then sends out a long, narrow tube which grows down through the pistil until it reaches an ovule. The contents of the pollen grain are then emptied into the ovule, which after this grows into a seed.

If a flower has a long tube, it may be necessary to carry the stigma up to the top, where visiting insects can touch it with pollen. In this case a stalk grows between the ovary and the stigma, pushing the stigma up into position, and this is called the *style*. Plate XVI., No. 8 shows a hyacinth pistil having all three parts. The ovules can be seen growing in the ovary.

Plate XVI., No. 9, the fruit of an apple cut across, shows what happens after pollination. Not only have the ovules grown into seeds, but the enclosing part has changed.

PICTURE SUMMARY

VEGETATIVE PROPAGATION

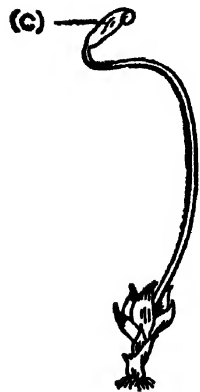
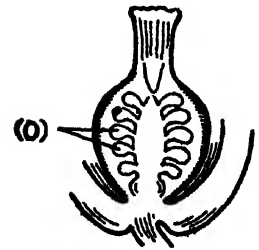
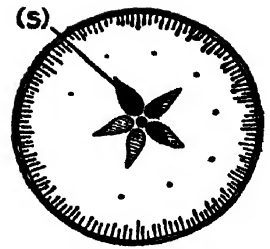
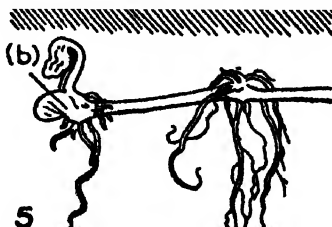
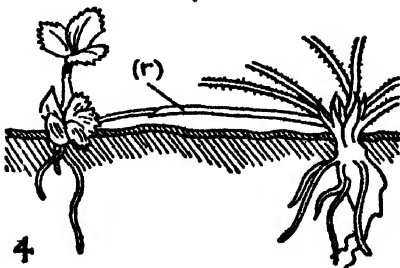
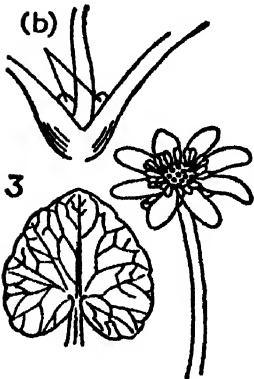
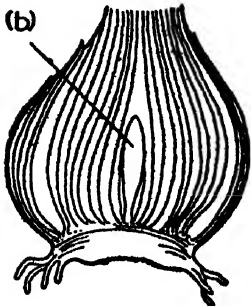
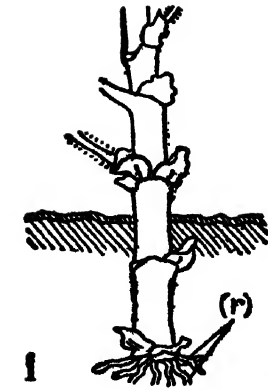
1. Geranium cutting forms roots (r).
2. Section of daffodil bulb to show bud (b).
3. Lesser celandine forms bulbils (b) which break off and form new plants.
4. Strawberry plant sends out runners (r) each with bud at end which roots and forms new plants.
5. Underground stem of goutweed showing bud (b) which forms new plant.

PLANTS WITH SPORES

6. Puff-ball sends out cloud of spores (sp) like smoke.
7. Single plant of cord moss. Capsule (c) containing spores.

SEEDS

8. Pistil of hyacinth. Vertical section to show ovules (o).
9. Cross section of apple to show seeds (s).



In the apple, the cup which enclosed the ovary becomes juicy and tempting to birds and others, while in many fruits, like the plum, the ovary wall becomes edible. In other fruits, these parts become hard and dry, and perhaps break open to shoot out the seeds, as in the violet. The whole fruit goes on growing until it is ripe, when the seeds may be dispersed in a variety of ways.

Conclusion.—We have seen, then, that all plants produce young, but that it can take place in different ways. Note that many

plants have more than one way. The chief methods are:

- (1) By vegetative propagation, when some kind of bud forms a new plant. Bulbs are a kind of bud.
- (2) By spores in the lower plants.
- (3) By seeds in the higher plants.

Spores and seeds have the advantage of being scattered far away from the parent plants and so spreading to new districts. They are pioneers of the plant population. They can obtain the help of wind, water and animals in dispersing them, while some fruits scatter their own seeds by explosion.

TEACHING NOTES

1. Practical work.—

I. CUTTINGS, LAYERING, ETC.—This chapter might be linked with practical work on propagation by cuttings, pullings, layering and other means of producing new plants vegetatively in the garden. Slips of willow will develop roots if kept in the class-room in a bottle of water. Many cuttings (pansies, carnations, roses) will strike readily if placed in pots or boxes containing a mixture of sharp sand and loamy potting soil. These could be kept in the classroom if sheltered from the direct sun with the soil kept well moistened.

II. BULBILS.—The peculiar buds called bulbils on the leaves of spleenwort or *Asplenium* ferns will grow readily if a frond bearing a bud is pressed into damp soil and kept moist.

III. CULTIVATION OF FERNS.—Spores of bracken and other common ferns will germinate and produce new plants with a little care. They may be grown in earthenware saucers scrubbed perfectly clean and filled with finely sifted baked soil. This must be kept very damp (but not waterlogged) until the plants are well established.

The saucers may be covered with tumblers, or small dishes with lids may be used. Air must be allowed to enter from time to time. When germination first occurs, a number of spores sprouting together will give the appearance of a green film but with a hand lens the separate green thread of each plant may be distinguished. This quickly develops into a small semi-circular or heart-shaped plate, lying against the soil. This grows to perhaps $\frac{1}{2}$ in. diameter, and becomes rooted, at the same time giving rise to a small, divided, but comparatively simple leaf. The plantlets may then be pricked out into small pots, where the fern will develop fully. The green plate which forms the first stage is called a prothallium or prothallus. Germination may be slow, so patience must be exercised.

2. Exercises.—

- (1) How do the lowliest plants and animals continue their growth?
- (2) What do you understand by the term "striking cuttings"?
- (3) What is a *bulb*?
- (4) Draw from memory a picture of a bulb, showing clearly all the parts, and labelling them.

- (5) Where is the *axil* of a leaf?
- (6) What is a *bulbil*?
- (7) How does a bulbil grow into a new plant?
- (8) How does the violet form new plants?
- (9) Why is an underground stem a good way of continuing growth?
- (10) Draw an underground stem marking the buds that will form new plants.
- (11) What are *perennial* plants?
- (12) Why is it necessary for plants to have other means of continuing growth besides by runners or underground stems?
- (13) Make a list of what are known as the "lower" plants.
- (14) What are *spores*? Name a plant which has them.
- (15) Where are the young seeds of a plant formed?
- (16) What must happen to the pistil of a flower before the plant can produce seeds?
- (17) Where is the *stigma* of a flower?
- (18) What changes take place in a flower after the stigma has received pollen?

XVII. LIVING THINGS MUST HAVE YOUNG

PART 2. ANIMAL FAMILIES: HIGHER GROUPS

Introduction.—We say that certain animals are related to one another, for instance, cats, tigers and lions; or dogs, wolves and foxes. How do we know this?

The chief reason for saying so is because they are alike in the structure of their bones, teeth, muscles and organs. They have the same ways of feeding, breathing, moving, bringing young into the world and caring for them.

Higher animals or vertebrates.—All the higher animals are linked together by the possession of a skeleton inside the body. This consists of a rod passing along the back. In the tadpoles of the sea squirt and frog it is merely tough, but in the rest it is gristly or bony, and divided into a number of joints or vertebrae, therefore, the animals are called vertebrates. They nearly all have a skull and two pairs of limbs, supported by the vertebral column, which also protects a nerve called the spinal cord. Notice the channel for it in Plate XVII., No. 1.

Lowest true vertebrates—the fishes.—The group of fishes have a true vertebral column

of gristle or bone, a skull and two pairs of limbs, but these are fins for swimming, not arms and legs. Plate XVII., No. 2 shows a salmon, which has a bony skeleton. Notice its paired fins. There are other fins, too. Fishes breathe by gills arranged in connection with slits in the sides of the throat. As water is gulped in by the mouth and passed out again through the gill slits, oxygen is taken from it and carbon dioxide given up by the blood. All vertebrates have gill slits at some stage—a chick in the egg and a rabbit long before it is born—showing that in time past they breathed in the same way as fishes.

Fishes have a keen sense of smell, and are able to detect scents borne through the water from great distances, and so find their food.

The body is usually covered with scales, which are overlapping plates embedded in the skin.

Most fishes drop their eggs in the water and leave them, but sticklebacks make a nest of water-weeds and the father guards it against all intruders.

Frogs, toads and newts.—Next to the fishes comes the group of *amphibia*. This name means that the animals are *both*

water and land animals, for they spend the first part of their lives breathing under water by means of gills, like fishes, then they go through a change, and breathe by lungs, so that they must come up out of the water to breathe. After this they spend part of the time on land and part in water.

Amphibia have no scales or other skin covering and no claws. The skin is moist, for they breathe through it as well as by lungs.

There is no family life in amphibia. In nearly all, eggs are laid in water and left to their fate, with a slippery jelly to protect them. Newts wrap each egg in a leaf of a water plant, while toads lay a string of eggs. Plate XVII., No. 3 shows a newt.

Reptiles.—The next group, the reptiles—meaning *creeping animals*—includes lizards, snakes, crocodiles and alligators (Plate XVII., No. 4), and turtles and tortoises (Plate XVII., No. 5), which all breathe by lungs. Except for the snakes and a few legless lizards, they have four legs carrying the body just above the ground. Eggs are laid, but the mother does not sit on them though some snakes, like the Indian cobra guard them.

Reptiles have claws on the toes, and the body is covered with scales which prevent the skin from being shrivelled up by the hot sun. No doubt this is one reason why they are able to live on land. Fossils found in the rocks show that long ago, before there were either mammals or birds, reptiles spread everywhere, some living in water, some on the land, while some had wings, the so-called "flying dragons." Some were giants of 60 to 80 feet long. But all these creatures died out, and the present-day forms are few and small in comparison.

Birds.—Birds are also descended from reptiles. They differ from the reptiles in having feathers instead of scales, feathers being the warmest covering known. They have a horny beak instead of teeth, though some ancient birds had teeth in the beak,

Plate XVII., No. 3. They walk on two legs, since the front legs have become wings, and their claws are often used for perching.

Birds are warm-blooded, that is, their blood is always at the same heat whatever the weather. In all the lower animals it changes with the weather, and so they become drowsy and dull when it is cold.

The most marked character of birds, however, is their power of flight, which enables them to cover great distances in search of food, and to build nests in safety. A swallow (Plate XVII., No. 8) can fly hundreds of miles.

Birds look after their young and make a home for them. They sit on the eggs to hatch them. The parents spend their whole time searching for food and tending their nestlings till they are old enough to leave the nest. Then they are driven away, and the parents take no further interest in them.

Mammals.—Mammals, too, had their humble beginning when the great reptiles were "lords of creation." They also are supposed to be descended from some small reptile, but they have followed quite a different path from the birds, though they, too, are warm-blooded. Instead of a covering of feathers, they have warm fur or hair.

While the birds lay eggs in a nest in a sheltered position, the mammals shelter their young inside the mother's body in a special sac where they are even better protected than young birds in a nest. When they are born they are suckled on the mother's milk. Usually there is some kind of lair in which the young spend their early days with the mother. Sometimes the father hunts for food for them. Nobody has much good to say of the fox, but at least he is a good father, and brings his booty home for his cubs.

Amongst the mammals we find the highest intelligence, especially in rats, pigs, horses, dogs, elephants and monkeys.

Plate XVII., No. 9 shows a mother and

baby. Man, the highest and most intelligent mammal, is the only one who cares for his children after they are grown up. It is this family love that has caused men to band together in tribes, clans and nations, to help one another against their common enemies, not only human, but wild animals, storms, cold and hunger.

Animal families.—Within the groups named are smaller groups or families. Thus we speak of the cat family, the dog family, or the rodents—rats, mice, squirrels. The members of each family closely resemble one another—their likeness is greater than their difference. For instance, the family of thrushes includes the song thrush, missel thrush, blackbird, fieldfare and redwing, which are nearly all sweet singers, like the same food, are similar in size and shape, but different in markings and habits. Their nests are similar, their eggs about the same size, but differing in markings.

Conclusion.—We have seen that the higher animals can be grouped together into five main sub-divisions, and within these are families. The chief points to remember are these:

(1) The vertebrates have an internal skeleton, consisting of a back bone or vertebral column, skull and two pairs of limbs (except where the limbs have disappeared, as in snakes).

(2) The chief sub-divisions of vertebrates are the fishes, amphibia, reptiles, birds and mammals, the birds and mammals being the highest.

(3) Birds and mammals have a warm covering and their blood always retains the same degree of heat—they are warm-blooded. They have both developed home life, and feed and look after their young devotedly.

(4) In man, love for the young has led to grouping into clans or tribes, and nations, to protect their homes and children.

TEACHING NOTES

1. Practical work.—Make out several large wall charts and encourage the children to collect pictures of vertebrates which can be mounted on the charts and clearly labelled to illustrate the classification of higher animals.

2. Exercises.—

(1) Why do we say that cats, lions and tigers are "related" to one another?

(2) What is a skeleton?

(3) Why are the higher animals called *vertebrates*?

(4) What is the name of the nerve that runs down the centre of the vertebral column?

(5) What are the lowest true vertebrates?

(6) What are *gills*?

(7) What do you understand by the term *amphibia*?

(8) What does the word *reptile* mean?

(9) How could you tell whether an animal was an amphibian or a reptile?

(10) Make a list of amphibians.

(11) How do reptiles breathe?

(12) What means of defence and covering have reptiles?

(13) How do birds differ from reptiles.

(14) What is meant by "warm-blooded" creatures?

(15) Why is flight a useful power to birds?

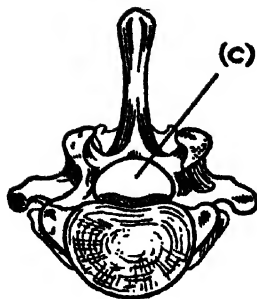
(16) Tell what you know about the way in which birds care for their young.

(17) What sort of covering have mammals?

(18) In what way do mammals care for their young?

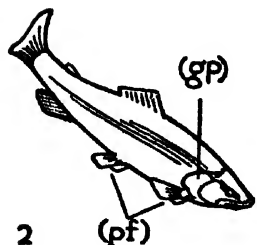
(19) Why have men formed into tribes and nations?

(20) Write down the members of the thrush family saying in what ways they are similar.



PICTURE SUMMARY

1. Vertebra, showing channel for spinal cord (c).
2. Paired fins (pf) in salmon correspond to arms and legs. Note gill plates (gp).
3. Newt has two pairs of legs; breathes through smooth naked skin; also has lungs.



LAND DWELLERS

4. Alligator, one of largest existing reptiles. Note body touches ground.
5. Indian cobra. Defends young and terrifies by puffing out hood.
6. Diplodocus, extinct reptile. Vegetarian.
7. Head of Archaeopteryx, ancient bird, showing teeth in beak. Also had long jointed tail and claws on wings.
8. Swallows can fly thousands of miles and catch insects in the air.
9. Human mothers do not drive away their children.

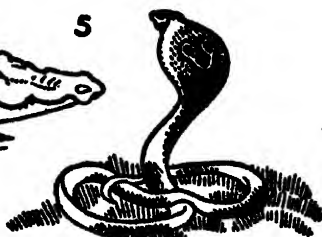
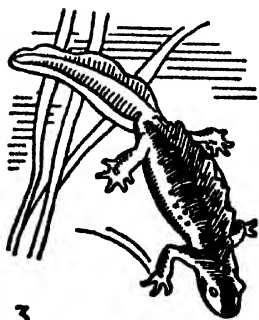


PLATE XVII

XVIII. LIVING THINGS MUST HAVE YOUNG

PART 3. ANIMAL FAMILIES: LOWER GROUPS

Introduction.—Like the higher animals, the invertebrates, which have no internal skeleton, are grouped together into several main sub-divisions, made up of families. As the ways of many of these animals have been described in earlier chapters, only a very brief account of the groups will be given here. Some of the less important sub-divisions are left out.

Protozoa.—This name means "the first animals," and the group contains the simplest animals, made of a speck of living matter so small that a microscope is needed to see it. It includes amoeba, the malaria parasite and noctiluca which causes the sea to glow with light on dark nights. All these animals divide to form new ones.

Sponges.—Sponges are colonies of animals something like protozoa, but sedentary. The living substance is arranged round a series of tubes. Water enters by small pores and is driven through the tubes, so that oxygen and particles of food can be extracted from it. It passes out again by one much larger opening. In a bath sponge these openings and tubes can be seen, but when covered by living flesh they are much smaller. Bath sponges as we use them consist only of the fibres which make the skeleton. Some sponges have a framework of spicules (little spikes) of a glassy material, or of limestone, instead of fibres. British sponges are only very small, Plate XVIII., No. 1.

Coelenterates.—This is the scientific name for the "mouth and stomach" animals, including jelly-fish, sea anemones, and corals. Most of them are sedentary, but they may have a free-swimming stage. The jelly-fish

have a fixed stage which then splits up into a number of thin, almost flat bodies like a pile of saucers. Each saucer then grows into a jelly-fish, Plate XVIII., No. 2.

In most coelenterates, eggs are shed into the stomach and, passing out of the mouth, develop into minute oval larvae. These are covered with short threads of living substance, called *cilia*, by means of which they can swim, for the cilia keep up a rippling movement which propels the larva through the water. This is a favourite device for the larvae of sea creatures, and we shall meet it again. Remember that we call young animals larvae when they differ in form from the parents.

Flat-worms.—Some of these worms live in water, but many of them, like the tape-worms mentioned in Chapter XV, are parasites which attach themselves to a host by means of a sucker. The liver-fluke, shown in Plate XVIII., No. 3, is a parasite on sheep. It has a larva which finds its way into the body of a small water snail which creeps out on to the grass of damp meadows.

Inside the snail the larva grows and gives rise to others, which finally produce a kind provided with a sucker. These work their way out of the snail and attach themselves to blades of grass. If the grass is then eaten by sheep, the worms find their way into its liver, where they develop into the mature *flukes* which cause the dreaded disease, sheep-rot.

Molluscs.—This word means *soft-bodied* and includes all the animals whose bodies are protected by a shell, and a few, such as slugs, in which the shell has been lost. There are several families, according to the kind of shell. The snails have a coiled shell in one piece, the mussels and oysters have the shell in two halves, hinged together,

while the famous nautilus—from the Greek for *sailor*—which floats on southern seas, has a shell made of a number of chambers, connected with one another by a hole in the wall of each, see Plate XVIII., Nos. 4 and 5.

In one family, that of the cuttle-fishes and octopuses, there is no shell at all to be seen, but it is represented by a plate under the skin, the *cuttle-bone* which is sold for canaries to nibble. Some of the octopuses, Plate XVIII., No. 6, grow to a great size and can strangle large fish with their eight powerful arms, provided with strong suckers. Cuttle-fish have ten arms, and an ink sac from which they can squirt a cloud of dark fluid—sepia—like a smoke screen, to hide them from their enemies. The nautilus is related to these, but has a beautiful pearly shell.

Echinoderms or spiny-skins.—This includes starfish and sea urchins, protected by an armour of closely interlocked plates beautifully fitted together. These bear spines, long in the sea urchins, Plate XVIII., No. 7, but quite short and blunt in the starfish. They move about by means of rows of tube-like feet, connected with canals inside the body. Sea water enters these canals by a small grating, and can be pumped into the feet, inflating them; or it can be withdrawn, turning them into hundreds of little suckers which stick fast to a rock or shell and cannot easily be dislodged. Sea urchins and starfish feed upon molluscs such as oysters and mussels, by forcing open their shells (see Plate XIII., No. 3). They have small, transparent larvae provided with cilia for swimming, Plate XVIII., No. 8.

Ringed or jointed worms: annulates.—These include the earth-worm and many marine worms. The earthworm lays a number of eggs, enclosed in a parchment-like case embedded in the soil. Inside this the eggs hatch, and feed upon one another until only one is left. This emerges as a small worm like its parents, except that it is paler. There is no larval stage, but marine worms have larvae which swim in

the plankton. Like those of the jelly-fish' sea anemones, starfish and sea urchins, the larvae are mere transparent specks, just visible in a glass of water held up to the light. They are usually small oval bodies provided with a girdle of cilia which enable them to swim, Plate XVIII., No. 9.

The earthworms belong to one family, the marine worms to another. The sea-worms have many bristles which in some cases serve as oars by which they row themselves through water.

As we mentioned in Chapter IX. some worms live in burrows and many, like sabella and the lug-worm, have gills for breathing under water, whereas the earthworms breathe through the skin.

Arthropods.—As a good deal has been said about this group already, we will just recall that the name means *jointed feet*, and that the body is encased in horny, jointed armour. Sometimes this is strengthened with lime also.

The families are the following:

(1) *Crustacea*—crabs, lobsters, shrimps. These have the hardest armour. They are nearly all aquatic, and breathe by gills, and they have larvae.

The larva of a crustacean is much simpler than its parents. It may be a small oval creature with three to five pairs of simple, jointed legs, or rather like a minute shrimp, with a jointed body and many legs. A crab larva has at first two long spines which make it look very formidable, see Plate IV., No. 4. The next stage is more like a tiny lobster, without the spines.

All arthropods must shed their hard skin in order to grow, for they can expand only while the new skin is soft.

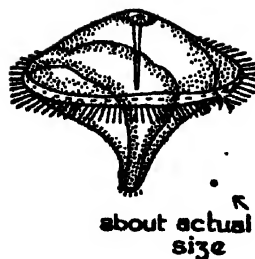
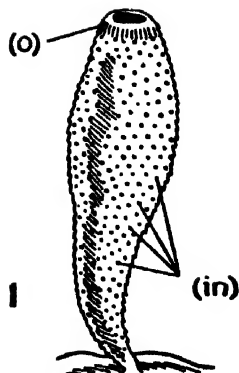
(2) *Spiders, mites, scorpions.*—These have four pairs of legs, and breathe by lung-books. They do not have a larval stage.

(3) *Millipedes and centipedes*, with many joints and many legs. They live on land and breathe by tubes, and they do not have larvae, for the young are miniature editions of their parents.

PICTURE SUMMARY

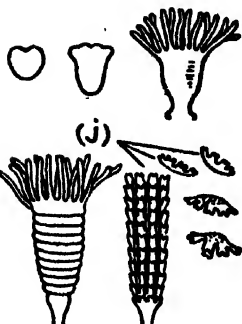
SPONGES

1. Sponge, showing small inlets (in) and large outlet (o).



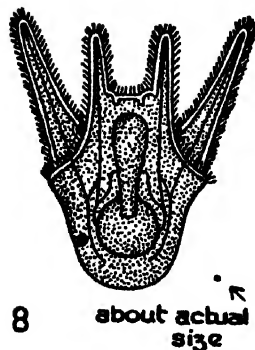
COELENTERATES

2. Jellyfish swims by contracting umbrella. Many jelly-fish break away from one fixed stage (j).



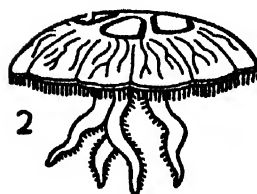
FLAT-WORMS

3. Liver-fluke is parastic on sheep. Causes "rot."



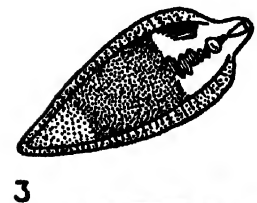
MOLLUSCS

4. Section of nautilus shell, showing divisions.
5. Nautilus floating on sea.
6. Octopus has eight arms or tentacles.



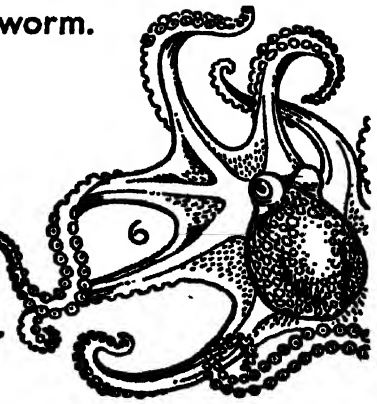
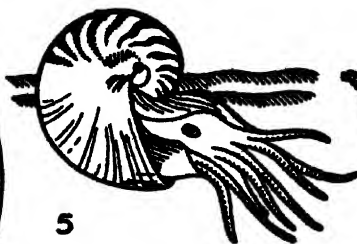
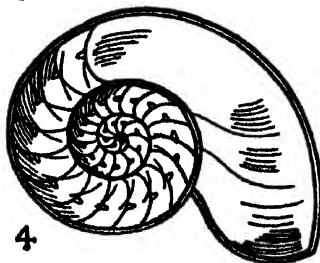
ECHINODERMS OR SPINY SKINS

7. Sea urchin.
8. Larva of sea urchin; swims by cilia.



ANNULATES OR RINGED WORMS

9. Larva of marine worm. Swims by cilia.



(4) *Insects*.—There are three pairs of legs and two pairs of wings, except in a few primitive forms, such as the silver-fish, or where a pair of wings is missing, as in flies. Head, thorax and abdomen are distinct. Most insects have larvae, unlike the parents.

Conclusion.—We have now named the main sub-divisions of invertebrates from the lowest—the protozoa—to the highest—the arthropods. Except in the highest group, the majority live in water, though here and there a few bold pioneers may be found who have come to live on land—the snails amongst the molluscs, the earthworms among the jointed worms.

It is very common amongst invertebrates to have a young stage or larva which differs from its parents both in its form and its way of life. It is usually much simpler than the parents, and very often free-swimming at the surface of the sea, in the plankton. Larvae are found amongst the coelenterates, the molluscs, the echinoderms, the marine worms, and the arthropods. Almost all the crustacea have larvae, and most of the insects. In the lower forms the parents take no care of them, but in a few arthropods, such as the crayfish, they are kept in a brood pouch, and in some of the insects great care is taken to provide them with food and shelter.

TEACHING NOTES

1. Practical work.—Do the same for the invertebrates as for vertebrates. The cheapest dark brown wrapping paper makes an effective background, with the labels neatly printed in Chinese white or pasted on.

2. Exercises.—

(1) What is the meaning of the word *protozoa*?

(2) Name three creatures which belong to this family.

(3) What is the difference between the protozoa and the sponges?

(4) How do sponges obtain nourishment?

(5) Make a list of coelenterates.

(6) How do jelly-fish multiply?

(7) What is a *larva*?

(8) How do most coelenterates produce young?

(9) How does the larva of a coelenterate move about?

(10) How does the parasitic liver-fluke find its way into a sheep's liver?

(11) What is the meaning of the word *mollusc*?

(12) Name four molluscs and say how their shells differ.

(13) What are *echinoderms*?

(14) How does the starfish move about?

(15) What are *annulates*?

(16) How are young earthworms produced?

(17) How do sea-worms move through the water?

(18) What does the word *arthropod* mean?

(19) What four groups of creatures belong to the arthropods?

(20) Why must arthropods periodically shed their hard skins?

XIX. ALL CREATURES NEED REST

Introduction.—Having considered many of the activities of living creatures, and having learnt something of the continuous work their various organs have to do, we should

not be surprised to find that these organs eventually become tired. We ourselves become tired after long walks, hard games, or long periods of thinking and reading.

The tiredness that we feel is chiefly due to the presence of poisons, the waste products of all our activities. These poisons—the "rubbish" of the body—include the gas carbon dioxide, and it is not until the poisons have been expelled that we feel fresh and ready for work again. It is to give the blood and whole system time to work off these poisons that we need rest, and particularly, sleep.

Relaxation and rest.—For rest, two conditions are necessary; (1) the body must remain still; and (2) the muscles must be relaxed. Notice how completely that most active creature, the cat, relaxes when he rests. His whole body seems to go soft and limp, as shown on Plate XIX., No. 1. We can practise relaxing our muscles for a few minutes at a time, and in that way get a good deal of rest. All our domestic animals seem to enjoy their resting times. Plate XIX., No. 2 shows a cow resting while it chews the cud.

Sleep.—Sleep is the most complete form of rest, for in that state we become unconscious; that is, we are no longer aware of what is going on round us, and so our nerves and brains are resting, and therefore our minds are resting too. Probably the senses are never completely at rest, however, while in most animals and more primitive peoples sleep is easily broken by any outside disturbance. If we are to sleep well, it is necessary to have as little disturbance as possible, for lights, sounds, and movements about us are noticed even during sleep and so our eyes, ears and nerves are not obtaining the complete rest they need.

The heart, blood vessels, and lungs are never completely at rest either, but during sleep they do far less work than when we are awake and active, merely keeping the various processes going.

The digestive organs need rest. It is for this reason that it is advisable to have only a light meal at night, not very late, so that after the time needed for digestion, the

stomach and other parts will have a complete rest. This is also why there should be no food between meals to give the digestive organs extra work.

Most of the warm-blooded animals seem to need sleep, but they do not, of course, all take it at night, for many creatures hunt at night and sleep by day. Most birds sleep at night. Many of them perch on twigs or branches, and there is a mechanism which causes the claws to close automatically round the perch, keeping the bird balanced with no risk of falling off while it sleeps. Some water birds sleep on the water, with their heads tucked in between the feathers of the back and wings, as shown in Plate XIX., No. 3.

Rest amongst the lower animals.—With regard to the lower animals, it is often difficult to say whether they actually sleep, but they certainly rest. If we associate sleeping with shutting the eyes, quite a number have no eyes to shut, or they have eyes but no eyelids. If you watch the creatures in a rock pool or aquarium you will find shrimps and crabs and other creatures lying still and quiet for long periods, though the slightest shadow or movement causes them to move away, so that they seem to be always alert or awake. Those which depend on the tides have usually definite resting times when the tide is out. The sea anemones, for instance, collapse; limpets remain closely glued to the rock; while periwinkles have a round door or plate, called an *operculum*, which closes the entrance for hours together, Plate XIX., No. 4.

The various flat fish, of which the plaice illustrated in Plate XIX., No. 5 is one, bury themselves almost completely in the sand at the bottom, leaving just the head and large, bulging eyes exposed. You can see this in the aquarium at the Zoo.

Hibernation.—This is the name given to the long winter sleep of certain animals. Many amphibia and reptiles bury themselves in some protected spot, a ditch or rubbish

heap, when the cold of autumn lowers their blood temperature to correspond. Here they remain, neither moving nor feeding, until the warm days of spring revive them. Frogs and newts have special stores of fat in the body which they can use as food during this long sleep. Some of the invertebrates, such as snails, hide themselves and remain passive in the same way, and they, too, have stores of fat in the body. If disturbed, they are quite unconscious and immovable, and cannot be roused unless they are brought into warmth. We say they are *torpid*. There is great danger in rousing any hibernating animal, for it cannot resist a return of cold, and will die.

Dormice, perhaps the best known of hibernating mammals, make a warm winter nest underground and sometimes come out, roused by February sunshine, when it is thought that many of them die with the returning cold. They become very fat in the summer, and live on this fat in the winter, for they do not store food.

During the winter squirrels sleep in a large nest or drey frequently built in a fir tree. This is not true hibernation, however, for they wake up and feed on mild days probably several times. The common belief that they store nuts and know where to find them is said by Miss Frances Pitt, a great naturalist, to be unfounded. She believes that though they have the instinct to make hoards, they do not remember where they are, and are as likely as not to discover some other squirrel's cache

Summer rest.—Many animals rest for the hottest part of the day in the summer, and come out to feed at dusk, through the night, or in the early morning. Many jungle animals prowl through the night. Plate XIX., No. 7 shows the great python resting during the day. Rabbits feed at night and in the early morning, but usually rest for a great part of the day in their burrows,

winter or summer. A few animals take a long sleep during the summer. This is called *aestivation*, which is the opposite of hibernation, from words meaning "summer" and "winter." A curious South African mud-fish curls up in the mud at the bottom of rivers in which the water dries up in the hottest weather.

The main resting period for green plants, at any rate in temperate and arctic regions, is the winter, when their activities cease almost completely. Their buds are protected by scales, and their breathing pores by cork. Plate XIX., No. 8 shows the winter buds of beech. In many plants all parts above the ground die down.

Certain plants show what are called sleep movements of either the flowers or leaves, as explained in Chapter XIV., but these cannot be compared with the sleep of animals. They are not connected with fatigue, but are usually a response to lowered temperature or to the presence of moisture in the air. Plate XIX., No. 9 shows the day and night positions of a crocus flower, which also closes if the day is damp or dull.

Conclusion.—We have now seen that all animals need rest. (1) Fatigue is due to poisons which make a period of inactivity necessary to allow their removal. In the higher animals rest is accompanied by relaxation of the muscles, and the nerves have a better chance of rest in darkness and silence.

(2) Sleep is the most complete form of rest.

(3) The lower animals rest in accordance with the conditions in which they live, it may be at low tide or in hot, dry weather.

(4) Hibernation is complete inactivity and unconsciousness during the winter, and aestivation the same during the summer.

(5) In temperate and arctic regions green plants are inactive during the winter.



1

PICTURE SUMMARY

1. Cat relaxes muscles when asleep.

2. Cows lie down to chew cud.



3. Swans sleep with head between wings and back.

4. Periwinkle closes shell by operculum (o) when resting.

5. Flat fish (plaice) bury themselves in sand to rest.

6. Dormouse makes special winter nest in bank.



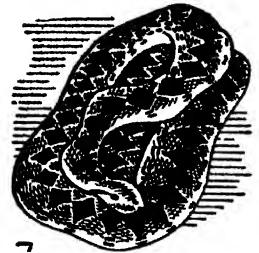
7. Python coils itself to rest.

8. Beech buds, showing winter scales.

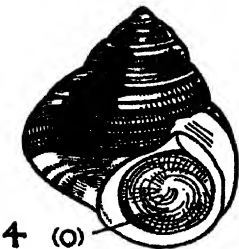


8

9. Crocus closes in dull, damp weather and at night.



9



4

(o)



5



6

TEACHING NOTES

1. Practical work.—

I. OUT OF DOORS.—Encourage the children to look for hibernating animals which are easily obtainable, such as snails, various caterpillars, and cocoons, and some butterflies, such as small tortoiseshell and brimstone (which fly as early as February).

II. PICTURE CHARTS.—The collection of pictures of animals which hibernate, with information about them, will help children to remember them; e.g., cuttings from newspapers and periodicals.

2. Exercises.—

- (1) Why do animals feel "tired"?
- (2) Why do all animals need rest?
- (3) What two conditions are necessary for rest?
- (4) What do you understand by the term "relaxed" muscles?
- (5) What is the most complete form of rest?

(6) What do you understand by the word *unconscious*?

(7) Why is it necessary to have quiet in order to sleep well?

(8) Why should you not eat food between meals and late at night?

(9) How do sea creatures obtain rest?

(10) What is an *operculum*?

(11) How does the plaice obtain rest?

(12) What is *hibernation*?

(13) Why do many amphibia and reptiles hibernate in cold weather?

(14) How do hibernating creatures obtain nourishment.

(15) What is the meaning of *torpid*?

(16) Make a list of hibernating creatures.

(17) What is *aestivation*?

(18) When do plants rest?

(19) In what way do plants rest?

(20) Why do sleeping birds not fall off their perches?

XX. FRIENDS AND FOES IN HOME AND GARDEN

Introduction.—We have already noticed that in the pursuit of their own business many animals and plants affect the life of man. They may help or hinder him quite unintentionally, and of course without being aware of it. We will just consider how a few of these creatures act as friends or foes in our homes or gardens.

Friends in the garden.—

1. *Plants.*—All the plants which we place in our gardens are either useful to us or give us pleasure, but most of those that sow them-

selves we do *not* want. We may recall here, however, the lowly plants without which no plants would grow—the moulds and bacteria which prepare the soil so that green plants can obtain food from it, as we saw in Chapter V., remembering at the same time that there are also moulds and mildews which cause plant diseases.

2. *Birds and beasts.*—Amongst the birds, all those which feed on insects, slugs and snails may be counted as friends, such as the little blue tit shown in Plate XX., No. 1, his cousins the great tit, coal tit and long-

tailed tit, and the robin, thrush and blackbird. Even if some of them take our fruit when it ripens they pay for it in the work they do, so it is best if possible to protect the fruit with nets, and encourage the birds. Most of those which feed on seeds are useful, too, for they eat the seeds of weeds. The goldfinch in Plate XX., No. 2 is a good example of the seed-eating finches, with their short, broad beaks like small nut-crackers.

Hedgehogs and shrews, frogs and toads, catch slugs and insects. Notice the fine pointed muzzle of the shrew in Plate XX., No. 3, almost like a bird's beak. He has sharp, needlelike teeth and is always ravenously hungry.

3. *Spiders, centipedes and insects.*—The garden spiders catch many small flies, including the winged aphides which spread the "blight" from plant to plant. Centipedes, which are arthropods living in the soil, eat slugs, snails, insects and earthworms, while the tiger beetle shown in Plate XX., No. 4 is one of many beetles which, with their larvae, have similar habits. The larva of the glow worm beetle, for instance, feeds on small snails.

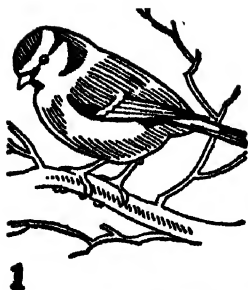
Most insects which feed on others must be regarded as helpful. Quite a number feed on greenfly or aphides, amongst them the ladybirds (which are small beetles) and their larvae, and the larvae of hover flies and lace-wing flies. They may be found on broad bean plants, rose shoots and other plants usually infested, and should be recognised and protected from harm. A lace-wing fly is shown in Plate XX., No. 5. Its delicate greenish wings and metallic golden eyes are distinctive. It is not really a fly, for it has four wings, and is more nearly related to the caddis flies and dragon-flies than to the flies. Its eggs are hung by stalks from leaves of trees such as lime. Its larva grows to about $\frac{1}{2}$ in. long, is jointed and pinkish yellow in colour. The hover fly larva is legless, like all fly "maggots," white and tapering, while the ladybird larva is active, with a jointed dark grey body spotted with black and yellow.

4. *Pollination of flowers.*—We ought certainly to give the bees a separate good word, together with other insects which pollinate flowers, for without them we should have scarcely any plants to eat. Amongst food plants only nuts and grains, such as wheat and oats, are wind-pollinated, while a few, such as garden peas, are self-pollinated. All the rest depend on insects. It has already been mentioned that when clover was taken to Australia and New Zealand, bees had to be taken too, so that seed could be set. It is difficult to realise how limited our diet would be without the good offices of these insects.

Enemies in the garden.—

1. *Insect enemies.*—These are too numerous to mention, for almost every plant is liable to be attacked by some insect—caterpillars, aphides, wireworms (or click beetle larvae) in the soil eating the roots, plant-eating beetles and flies. Some garden plants have their own special enemies, such as the turnip flea, the cabbage moth and butterfly, the onion fly, the rose sawfly which might be mistaken for a small caterpillar. Caterpillars, however, never have more than five pairs of pro-legs behind the true legs, while sawfly larvae have six to eight pairs. It is in tracking down the eggs and larvae of these pests that the birds mentioned are so helpful.

2. *Birds.*—The worst enemies amongst birds are the house-sparrows, starlings and pigeons. The harm is chiefly due to their large numbers—a few would not matter. Indeed, they would be useful, the sparrows in eating seeds of weeds and to some extent caterpillars and other insects; the pigeons in eating seeds, and the starlings in eating slugs and insects. But no gardener can allow hordes of these birds to raid his garden. Pigeons (Plate XX., No. 6) will eat any sort of crop, and are specially fond of young peas and young shoots of any kind, while sparrows will tear up and destroy young shoots and strip the petals of flowers out of sheer mischief.



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2



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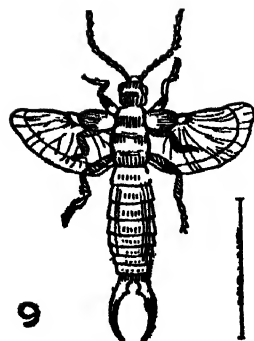


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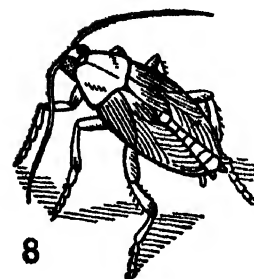
PICTURE SUMMARY

FRIENDS IN THE GARDEN

1. Blue tit destroys many insects, their eggs and larvae.
2. Goldfinches feed on seeds and destroy many weeds.
3. Shrew feeds on insects, slugs and worms.
4. Tiger beetle and its larvae eat snails, slugs, worms and insects.
5. Lace-wing fly larvae feed on greenfly.



9



8

FOES IN THE GARDEN

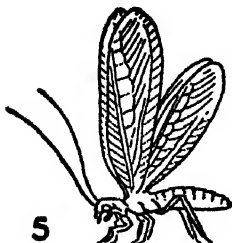
6. Pigeon attacks young plants.

FOES IN THE HOUSE

7. House mouse is destructive and causes unpleasant smell.
8. Cockroach has same character as mouse.
9. Earwigs come indoors in hot weather and get into food.



7



5



6

3. *Mice*.—There are several different kinds of field mice, all destructive in a garden. They, too, are partial to young peas and other young plants. Sometimes they will eat the seed and leave the young shoot lying on the ground.

Friends in the house.—Our friends in the house are few but very valuable. The dog who guards the house, and the cat who keeps away mice do us great service, as well as giving faithful companionship.

Enemies in the house.—There are certain animals which have given up an out-door life and taken up their abode in the houses and other buildings of men. While they are not all actually harmful, their presence is disagreeable, as in the case of bats and house spiders. Many of them soil clothing and food, or leave an unpleasant smell. Amongst those which are actually destructive of food or clothing are rats and mice (Plate XX., No. 7), clothes moths, cockroaches and crickets. Plate XX., No. 8 shows a cockroach or "black beetle," though it is not really a beetle at all. These are both destructive and unpleasant, for they have an unpleasant odour, caused by a yellowish fluid which they exude. Their eggs are laid in crevices of boards or folds of curtains.

Fleas and bugs are other unpleasant insects, difficult to destroy if once they infest a house. Rats and mice are the only mammals which usually make their way into buildings, and both are highly des-

tructive. Watchfulness and cleanliness are necessary if these animal pests are to be kept away.

Occasionally in a hot, dry summer certain outdoor insects will invade houses. Amongst them are earwigs (Plate XX., No. 9) and ants, which though not actually harmful, will get into food. Garden spiders sometimes come indoors in the autumn, and cabbage caterpillars will often appear and crawl up to hibernate on ceilings. This suggests how the habit of living indoors may have started from accidental incursions.

Conclusion.—We see that man looks upon some animals as friends because they help him against others which are harmful and therefore enemies. His chief friends in the garden are:

(1) Insect-feeding birds, frogs and toads, hedgehogs and shrews.

(2) Insects which feed on others, e.g., ladybirds, the larvae of ladybirds, hover flies and lace-wing flies, some beetles and their larvae.

(3) Seed-eating birds which destroy weeds.

(4) Bees and other insects which pollinate flowers.

His chief friends in the house are the cat and dog.

His chief enemies in the garden are insects which feed upon plants, and sparrows, starlings, pigeons and mice.

His chief enemies in the house are rats, mice and cockroaches, and in some old or neglected houses, bugs and fleas.

TEACHING NOTES

1. Practical work.—

I. SCRAP-BOOKS.—It would be valuable to let the children keep scrap-books in connection with this subject, in which not only pictures and newspaper cuttings might be collected, but notes on their own individual observations in the garden at home, accom-

panied by illustrations made from actual material.

II. OUT OF DOORS.—Suggest that they should help as much as possible in garden or allotment, in order to become familiar with the various animal friends and foes,

searching for pests on plants and by digging and hoeing round the roots.

III. CHARTS AND COLLECTIONS.—A class-room collection of mounted specimens of animal pests, with pictures and annotations, would have practical value as well as serving to intensify interest in this important subject. Small insects are best displayed in 2 in. specimen tubes, in spirit or formalin. These can be secured to a chart by two loops of thread, top and bottom. The contents can then be examined with a hand lens.

2. Exercises.—

(1) What are the names of the small plants without which no green plants could grow?

(2) In what ways may a bird be the friend of man?

(3) Make a list of birds which are friends of man.

(4) In what way is the garden spider a helpful creature?

(5) Why is the lace-wing fly not regarded as a true fly?

(6) How would you recognise the larva of a lace-wing fly?

(7) How would you recognise the larva of a ladybird?

(8) Why are we so dependent upon bees for the food we obtain from plants?

(9) Make a list of harmful insects.

(10) In what ways are pigeons and sparrows harmful?

(11) What are our two great animal friends in the house?

(12) What harm can rats and mice do in the house?

(13) What is a "black beetle"?

(14) How would you distinguish a caterpillar from a sawfly larva?

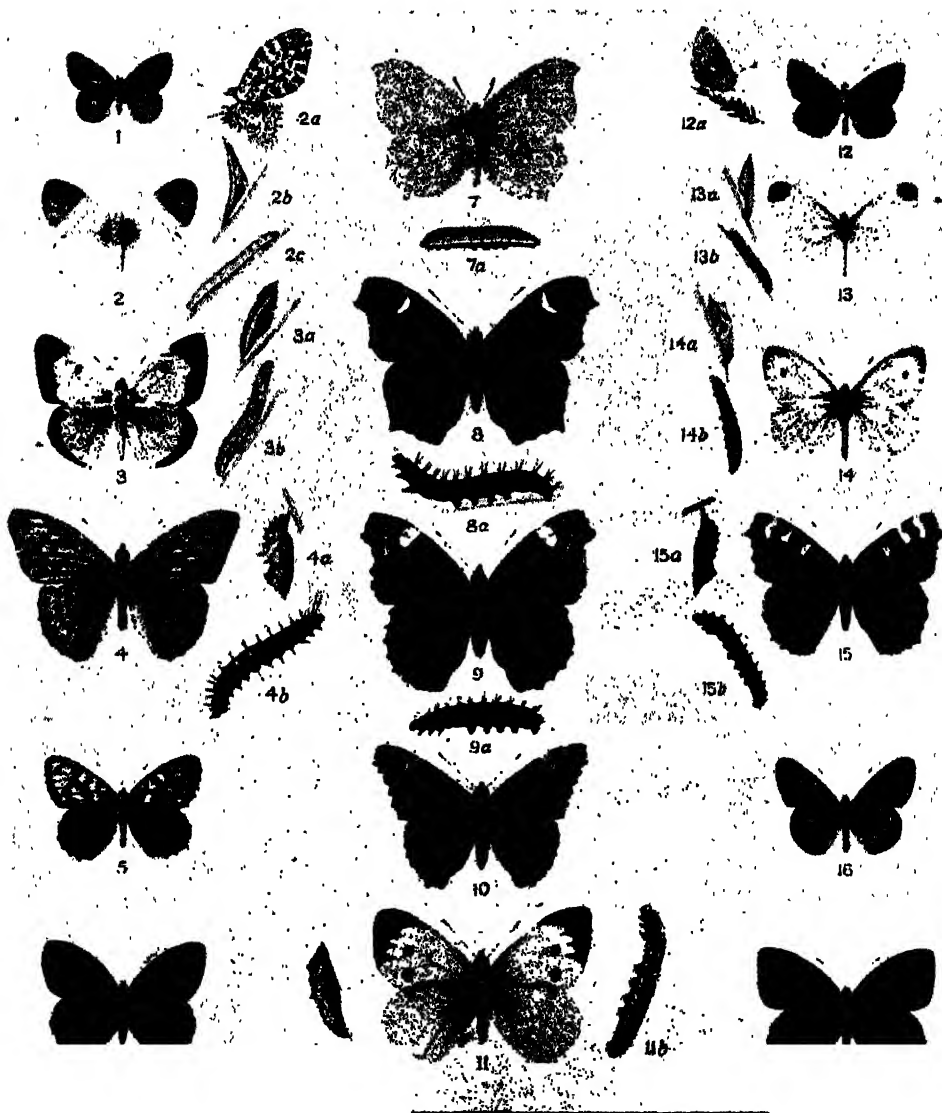
(15) Make a list of out-door insects which sometimes invade houses.

(16) Say whether the following creatures are friends or foes of man: garden spider; centipede; millipede; lace-wing fly; ladybird; blue tit; starling; pigeon; shrew; field mouse.

(This course of lessons on *Twenty Essentials of Nature Study*
has been written by Kate Harvey, M.Sc.)



SOME COMMON INSECTS



BUTTERFLIES

Butterflies.—

1. *SMALL HEATH*. Pale brick, with narrow dark wing borders and small dark dot near front angle of fore-wing.

Caterpillar green, striped yellow and white,

lives on meadow grasses. Meadows and heaths. Succession of broods from April to September.

2. *ORANGE TIP*. Male, caterpillar and chrysalis. White, with orange tip to front

wing in male only. Under side of hind wings marbled with green.

Caterpillar green, downy with black specks, on cress and cuckoo flower. Chrysalis greenish yellow and very slender. Common, fields and waysides.

3. *CLOUDED YELLOW*. Male yellow, female cream, with black borders, and one black spot on each fore-wing. Hind wings deepen to an orange centre.

Caterpillar smooth green with yellow stripes and black dots; feeds on small leguminous plants such as trefoil. Chrysalis green with yellow lines. Eastern and southern counties, in the open.

4. *SILVER-WASHED FRITILLARY*. Tawny orange, with black spots and streaks and delicate black scallop pattern on edge of wings. Gleams with silver.

Caterpillar brownish with long stiff bristles feeds on dog violet, raspberry, nettle and guelder rose, but conceals itself by day. Chrysalis suspended on low plants, brownish with dark spots and stripes and light silver or gold spots on under-side. Woods. Widely distributed but not exactly common.

5. *WALL BROWN*. Tawny brick or dull brown, boldly patterned with brown on fore-wings, small ring in front outer angle of fore-wing, hind wings have two curved bars of brick, outer patterned with small rings.

Caterpillar dark green, slightly striped white and yellow. Feeds on grasses, June and September. Chrysalis dark grey, with dorsal prominence.

6. *RINGLET*. Dusky brown with three small black rings with pale centres on each fore-wing and two on each hind wing. Woodland glades, and bushes.

Caterpillar greyish with reddish down, and dark brown stripe along back, bordered by cream and white. Hibernates, then feeds on seeds and grasses till May or early June. Chrysalis on ground. Shaded brown, with bristles at hind end.

7. *BRIMSTONE*. Butterfly and caterpillar. Sulphur colour, with an orange spot on each wing.

Caterpillar smooth bluish-green. Feeds on buckthorn. Chrysalis green with pale yellow stripes.

8. *PEACOCK*. The name explains itself—colouring suggests eye in peacock's tail feathers. Red brick-orange ground, "eyes" in angles of wings in deep red, black, lilac and yellow. Fairly common in woods and lanes and gardens, especially on Michaelmas daisies.

Caterpillar shining black with white dots and black spines. Feeds on nettle and sometimes hop. Chrysalis grey with metallic spots.

9. *RED ADMIRAL*. A close relation of the peacock, but instead of "eyes" has oblique bars on wings of brick, black and white, on brownish ground. Reddish-brick border to hind wings.

Caterpillar of same spiny type, but dull yellowish-green with yellow spines. Feeds on nettle in July—especially on seeds. Each caterpillar feeds singly, protected by a nettle leaf drawn round it and caught together by a silk thread. Chrysalis greyish-brown with a few metallic spots.

10. *PAINTED LADY*. Wings mottled pale brick on dark (nearly black) ground. Body and base of wings light brown. In August on waste ground, sitting in the sun on flowers.

Caterpillars dark grey with interrupted yellow stripe and short spines. Feeds singly in rolled-up leaves, nettle, mallow and others. Chrysalis brown with light spots and shining golden spots.

11. *LARGE GARDEN WHITE*. Female, chrysalis and caterpillar. Butterfly creamy-white with black margin to fore-wings, and in female, black spots. Yellow under-side.

Caterpillars pale cream and green, with black spots and sparse bristles. Chrysalis pale coloured, with powdering of fine gold

dots characteristic of several other butterflies, which gives the name (*chrysos*—Gk. gold). Should properly be applied only to pupae of butterflies. Note also the spinous projections which hold a silk girdle in place, by which the chrysalis is suspended. Caterpillars feed on cabbages and other cruciferous plants, and garden nasturtiums.

12. *COMMON BLUE*. Male butterfly, and under-side. Blue suffused with violet. Under-side delicately spotted grey and tawny. Female brown. Heaths and open country, especially on chalk, but found in other places.

Caterpillar green and yellow, with black spines. Feeds on vetches and other low-growing plants.

13. *WOOD WHITE*. Delicately veined white, with greyish tips to fore-wings. Weak flight. Shady places.

Caterpillar slender, smooth pale green, and pale, slender pupa. Caterpillar feeds on trefoil and vetch.

14. *GREEN-VEINED WHITE*. Larger than garden white butterfly, with more strongly marked veins, and grey border to each fore-wing. A small grey spot in outer angle of each fore-wing, and near front edge of hind wing.

Caterpillar smooth green and white, pupa mottled light brown. Same food as garden white.

15. *SMALL TORTOISESHELL*. Wings deep reddish-orange and brown with squarish spots of yellow, very dark brown, and white forming front border, and small blue crescents bordering the outer edge of the wings which are slightly notched.

Caterpillar and chrysalis dark, the former, which feeds on nettles, having short, sparse bristles and greenish-yellow longitudinal stripes. Closely resembles large tortoiseshell butterfly except in size and in having darker bases to the fore-wings, but caterpillar of large tortoiseshell feeds on elm.

16. *PEARL-BORDERED FRITILLARY*. Like a small edition of the silver-washed butterfly, but without the silver. Common in woods in May and June.

Caterpillar, which feeds on dog violet, is blackish, with bluish-white dots and stripes, and yellow spines on the middle segments.

17. *MEADOW BROWN*. Dusky brown, with tawny patch on fore-wings, in which is a small black ring. Very common.

Caterpillar green, with darker dorsal stripe and cream-coloured lateral ones. Feeds on meadow grass.

Moths.—

1. *CINNABAR MOTH*. About 1 in. across wing. Fore-wings dark grey with a scarlet stripe along the front margin, and two scarlet spots close to outer edge. Hind wings scarlet.

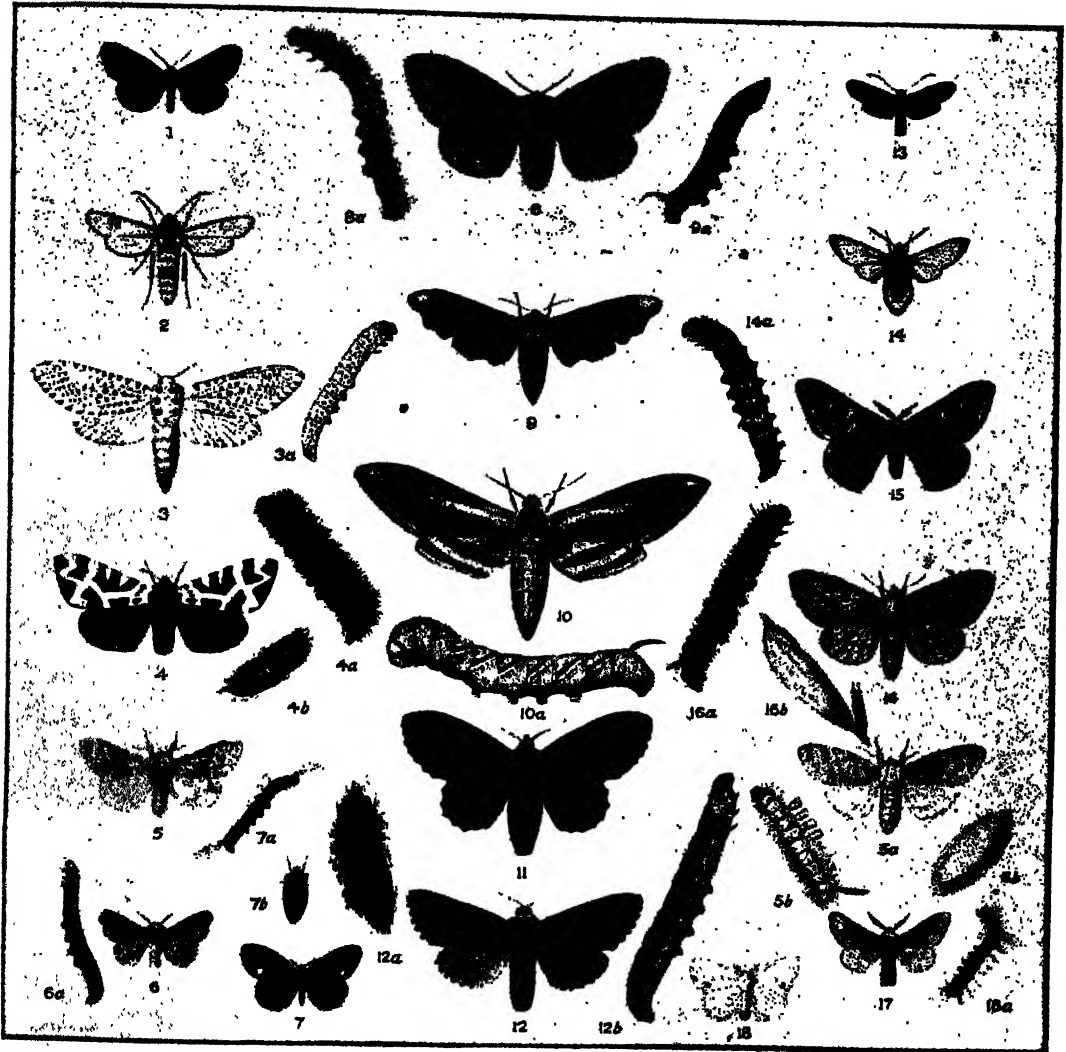
Caterpillar black and orange, feeds on ragwort, gregariously. Bright warning colours—inedible.

2. *HORNET CLEARWING*. Remarkable for its resemblance to a hornet in form, size and colouring, yellow and brown striped, with clear wings bordered by a narrow light brown stripe.

3. *WOOD LEOPARD MOTH*. A moth resembling a hawk-moth, but the wings are not so long or so pointed. (In the hawk the wings are at least twice the length of the body.) Grey body with black spots on thorax and delicate white wings spotted with grey.

Caterpillar white, spotted with black, with black head, burrowing into and feeding on wood of many trees. Pale yellow with scaly black plates on first and last segments, and black spots on head. Two to 3 in. long when full grown. Pupa large, smooth and brown.

4. *COMMON TIGER MOTH*. One of our most striking moths. Short thick body (about 1 in.) is brown and scarlet with dark



MORPHS—I

bars across. Fore-wings boldly patterned brown and white trellis-work; hind wings scarlet with almost black spots.

The caterpillar is the well-known "woolly bear," with a dark body covered with long brown and black hairs. These can be shot out if the caterpillar is alarmed, and can be very irritating and even cause a rash on the skin. They walk very rapidly with a rippling movement. The pupa is glossy

black, and is enclosed in an off-white, feltlike cocoon, in which most of the caterpillar's hairs, shed as it prepares to pupate, are entangled. Feeds on grass and herbage.

5. *PALE TUSSOCK MOTH*. A soft-looking, moderate sized moth with rounded wings and thick body. Fore-wings pale grey marked with darker wavy lines, hind wings lighter. The "tussocks" are bold

tufts of yellow hairs decorating the first four abdominal segments of the grey caterpillar, which is slender and spotted with red. Wing span of moth under 2 in.

Caterpillar about 1 in. long, feeds on hazel, oak, poplar, fruit trees and hops.

6. *LACKEY MOTH*. An inconspicuous light brown moth, about 1 in. across, with two pale wavy lines parallel to outer edges of fore-wings, dividing them into three equal zones.

Caterpillar greyish, with bright orange-scarlet stripes extending the whole length of the body, separated by a white median dorsal stripe. Very injurious to the leaves of fruit trees. Gregarious, feeding and sheltering inside a silken tent.

7. *VAPOURER MOTH*. The male is reddish-brown with faint dark network on fore-wings, and white spot near outer margin. The female actually has a much larger body, but only vestiges of wings, so that it is inconspicuous.

Caterpillars grey, with orange and white hairs and tubercles, tufts of yellowish-brown hair (yellow in the *smaller* male caterpillars) and a pencil of black hair on first and eleventh, and two on sides of fourth segments. Very conspicuous and handsome. Destructive to leaves of many trees.

8. *OAK EGGAR*. Both caterpillar and moth tawny brown. Large, thick-bodied moth with rounded wings and a ring on each fore-wing. Wings darker near body.

Caterpillar slightly hairy with white dots marking the breathing pores (spiracles). Feeds on blackthorn.

9. *LIME HAWK-MOTH*. All the hawk-moths have long, narrow, pointed wings, hind wings much smaller than front pair, and body ending in a point. Fore-wings of this moth olive-green with pale tips and with two broad bands of mauve-pink, one close to the body, the second nearer the edge and with a deep V indenting

its inner margin. Body about 1 in. long, wings about 2½-3 in. expanse.

Caterpillar bright green with light orange spiracles and oblique lateral bands of yellow and red. A prominent curved spine or horn projects from the end of the body.

10. *PRIVET HAWK-MOTH*. Larger than foregoing, brown, greyish-fawn and pink in colour; hind wings rosy. Wing expanse about 4 in.

Caterpillar of same type as in lime hawk-moth though larger, but with mauve instead of yellow and red stripes. Both named from food of caterpillar.

11. *LAPPET MOTH*. Purplish-brown, the colour of young copper-beech leaves. A large moth with rounded, slightly toothed wings and thick body.

Caterpillar, which feeds on sloe and hawthorn, very large, with fleshy appendages or "lappets." Dark grey or brown, with long tufts of hairs at sides, and a very large black tuft on next to last segment.

12. *GOAT MOTH*. Moth ashy grey, with rounded wings and thick body.

Caterpillar destructive, large, almost smooth, light chocolate-brown on back, pale yellowish-fawn below, with black head and spot behind head. Feeds on wood of trees like leopard moth, especially willow and poplar. Pupa golden to dark chocolate-brown, smooth, but with reflexed hooks, enclosed in a cocoon roughly made of chips of wood gummed together, and lined with silk. The hooks help it to escape from the tree. Name due to strong smell of caterpillar.

13. *BROAD-BORDERED FIVE-SPOT BURNET*. A small moth with dark bluish-green fore-wings each with five scarlet spots, which, however, are usually confluent, making three apparently. Hind wings much smaller, scarlet edged with dark grey. Wing expanse about 1 in., wings narrow. Marshy places.

Caterpillar green with white and yellowish stripes, feeds on trefoil, vetch and other low plants.

14. *NARROW-BORDERED BEE HAWK-MOTH*. At first sight closely resembles a bumble-bee in size and shape of body and wings. Wings bordered with light brown. Mouth-parts and antennae, in both this moth and the hornet clearwing moth, would, however, at once indicate to an observer that these are moths, for they have the coiled "tongue" between short feathered "palps" or tasting organs, and the slightly feathered antennae of a moth. Flowery meadows near woods, in May. Quicker and more sudden flight than bees.

Caterpillar bluish-green with lighter marking, and white lines dotted with red. Scabious, honeysuckle.

15. *EMPEROR MOTH*. The peacock eyes on all four wings are the distinguishing marks of this moth, which has purplish-brown front wings, and paler, more reddish hind wings. A dark bar extends along the wings close to the outer edge. The short antennae are conspicuously plumed.

16. *DRINKER MOTH*. Moth cream to tawny yellow ochre, downy. Wing expanse about 2 in.

Caterpillar rather resembles a "woolly bear" at first glance, but the hairs are not so long, the general impression of the colour is light brown, due to the hairs, though the body is slaty-blue. Two pencils or tufts of light hairs project from the back, one near the front and one near the hind end of the body. A light-coloured, silken cocoon is made. Feeds on grass.

17. *DECEMBER MOTH*. A softly-coloured moth with brown body and lighter grey wings. Wing expanse about 1 in. Hind wings lighter than front. Narrow yellowish-buff stripes parallel to outer edge of wings. Appears October-December.

Caterpillar feeds on trees, and is gaily

coloured with white and red spots, broken orange stripes, and black and grey hairs.

18. *GOLD-TAIL*. White with abdomen tipped gold. About 1 in. wing-span.

Caterpillar brightly-coloured on black, with delicate tufts of long hairs on fourth and eleventh segments. A broken white median line along the back separates two broken red bands bordered with black. Feeds on fruit trees and others.

19. *LARGE WHITE PLUME MOTH*. Actually only a small moth, though the largest of the "plumes." Each wing is divided into narrow segments, so that there appear to be five white plumes on each side of the body. Legs also long, delicate and trailing, adding to feathery effect. Very dainty little moths.

20. *EARLY GREY MOTH*. Pale grey with yellowish hind wings and a row of dark pear-shaped spots bordering forewings. 1½ in. across wings. Appears March-April.

Caterpillar feeds on honeysuckle, but hides during day.

21. *COMMON YELLOW UNDER-WING*. Brownish grey to dark brown, with body projecting well behind wings. Hind or under-wings bright yellow ochre with black marginal bands. About 2 in.

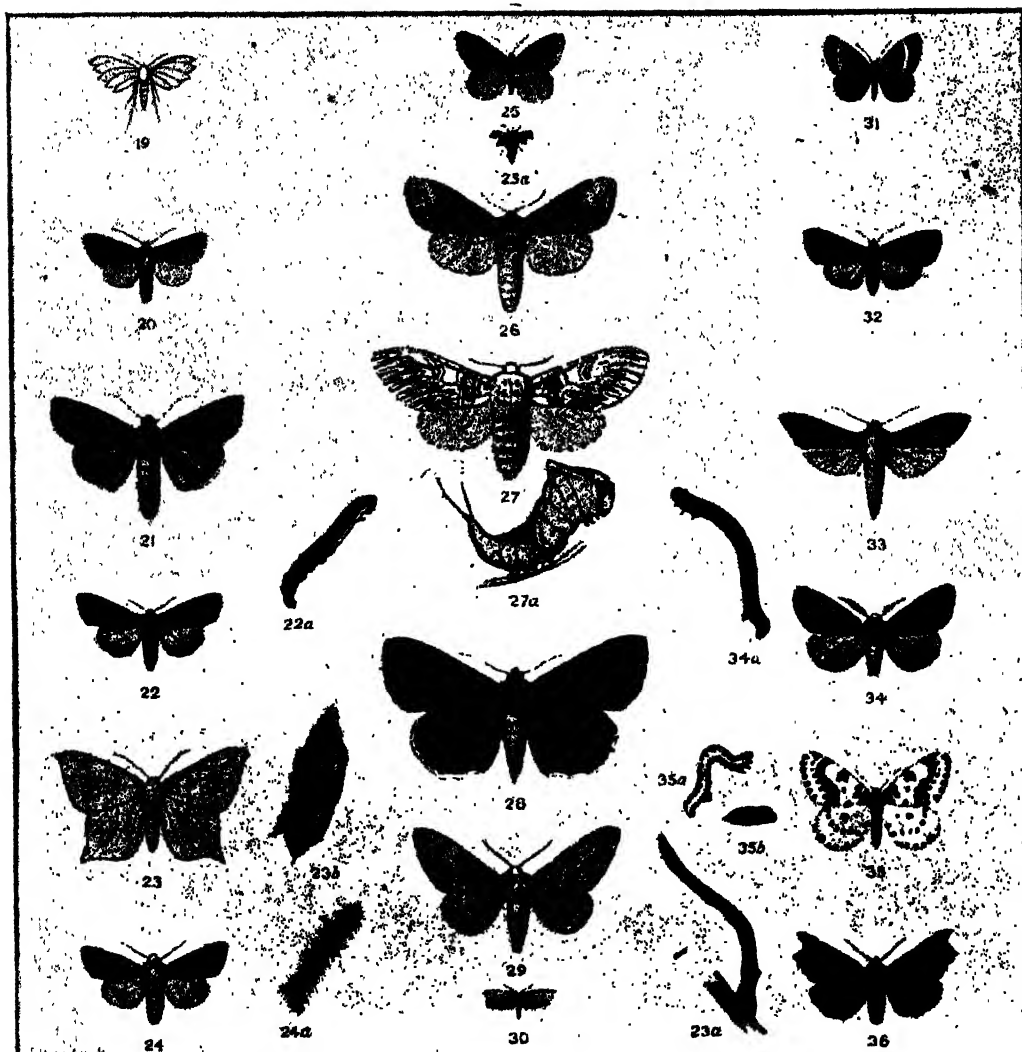
22. *CABBAGE MOTH*. An inconspicuous greyish moth with yellowish markings. 1 in.

Caterpillar smooth, green or greyish, with faint oblique stripes on sides.

23. *SWALLOW-TAILED MOTH*. Pale yellow, with hind wings drawn out into points.

Caterpillar well-known because of its resemblance to a small leafless twig, slender, stiff, and dull brownish-grey. Various trees and bushes; e.g., sloe, elder, honeysuckle.

Caterpillar hibernates.



MOTHS—2

24. *GREY DAGGER MOTH*. A pale grey moth, fore-wings darker, with grey marks pointing from edge to body, something like daggers with very wide cross-pieces. Caterpillar on fruit trees and others.

25. *WINTER MOTH*. Destructive to fruit trees. Light fawn with slightly darker shading. Female has only vestiges of wings, and has to crawl up to lay eggs, hence the

use of grease-bands, but it is said that males have been known to carry females and so defeat the object of the band. Eggs laid on trees in late autumn hatch in March.

Caterpillars, green or brown, with a dark line along the back, and three whitish ones on each side.

26. *BUFF TIP MOTH*. Front wings pale grey with dark wavy streaks and

prominent yellow-buff tips. Hind wings and hind part of body cream; front part buff and orange. Wing expanse $2\frac{1}{4}$ – $2\frac{1}{2}$ in.

Caterpillar mostly on elm.

27. *PUSS MOTH*. Large, pale grey, downy, with darker spots and streaks.

Caterpillar unique: large thorax broadens to a peak on dorsal side of abdomen, which then narrows to a point adorned with two streamers. Under parts bright green, dorsal parts grey. A broad pigment patch spreads over from front part of body, and laterally into a "saddle." A bright red and orange "face" is really the front part of the thorax. The curious form, "face," and terrorising attitude adopted are said to be a protection against the enemies of this quite harmless creature.

28. *RED UNDERWING*. A large moth (3 – $3\frac{1}{2}$ in.) with wings extending to level of end of body. Fore-wings grey, with wavy dark lines, hind wings vivid crimson with broad black border and narrower curved black inner band.

29. *PEPPER AND SALT MOTH*. Handsome dark and light grey moth, with distinctive wavy markings all over wings, fairly equally distributed and evenly patterned.

30. *COMMON ERMINE MOTH*. Small, slender, with narrow wings which lie very close to body when at rest. Fore-wings white, finely dotted with black. Hind wings fawn or greyish.

Caterpillars are responsible for webs often covering privet and other bushes, inside which they live gregariously while they strip the leaves. There are several slightly different ermine moths.

31. *COMMON CARPET MOTH*. A slender grey and brown moth, about 1 in., marked with fine dark lines parallel to edge of wings, and one white bar on the fore-wings. Suggests some of the old-fashioned Brussels carpet patterns.

32. *DARK BROCADE MOTH*. Short body. Front wings dusky brown, with darker spot, almost square, near hind margin and zigzag line bordering margin, and other dark markings, all edged with yellowish-fawn. Hind wings grey, shaded darker.

33. *COMMON SHARK MOTH*. In shape rather like the hawk-moths—long, pointed body and pointed grey fore-wings, with much smaller, clearly veined yellowish-grey hind wings. About 2 in.

34. *BRINDLED BEAUTY*. Brown and grey, with brindled markings; i.e., faint spots and well-marked dark lines, following the shape of the wings. Short body. Female paler.

Caterpillar a "looper" or "göometer" (earth-measurer), reddish-brown and purplish-brown, striped longitudinally, the stripes separated by fine black lines, small yellow spots on back, and narrow yellow band behind head. Feeds on oak, birch and other trees, including fruit trees. Very plentiful in London squares.

35. *MAGPIE MOTH*. Also called currant or gooseberry moth. One of the best known to gardeners for the depredations of the caterpillar on fruit bushes, and on the ornamental evergreen *Japanese euonymus*. Moth cream, with black and yellow spots and streaks, very variable in quantity and depth of colour.

Caterpillar same colouring, black spots on back and yellow longitudinal stripe above legs on each side. Swings from twig to twig on fine thread. Pupa shining black with yellow bands—no cocoon.

36. *HERALD MOTH*. Fore-wings reddish-grey to reddish-flesh colour at margin, with a broad triangular reddish-orange band, narrowing to the thorax, and marked with light and dark grey and orange and white dots, the colouring and design faintly suggesting a herald's garb. Margin, deeply notched behind front angle. Hind wings

pale grey. On the wing in August and September. Hibernates and then reappears from March to June, and is common.

Caterpillar green and velvety, striped dark green, and yellow or white. Feeds on willow and poplar.

Helpful Insects.—The insects in this plate illustrate the wide range of habit, size and type to be found among the vast numbers that come into contact with man's life. A small proportion of these may be regarded as helpful as shown in the appended notes.

1. *HONEY BEE*. Worker, queen, drone and larva. Honey or hive bees have a highly organised society: the queen concentrates on egg laying, while the workers perform all other duties of the hive—gather pollen and nectar for bee bread and honey, make wax by means of glands in the abdomen, model the cells which make the comb, clean and attend to the larvae. Incidentally, in collecting honey and pollen, they bring about cross-pollination of flowers, securing the vigour of stocks and, in many cases, the survival of the breed, since many flowers can receive pollen only from other flowers. Apart from cereals, the greater part of all our crops depends upon the activity of bees and other insects to produce their seed.

2. *LADYBIRD*. Adult, larva and pupa. Many distinct species of this small beetle exist. All, both as larvae and adults, feed upon aphides (greenfly and allies). Larva black with yellow spots. Moults skin several times, then changes into short, thick, black and yellow pupa, which is quiescent for some time. Finally, adult beetle emerges. Hibernates under loose bark or amongst evergreens such as box, often large numbers together.

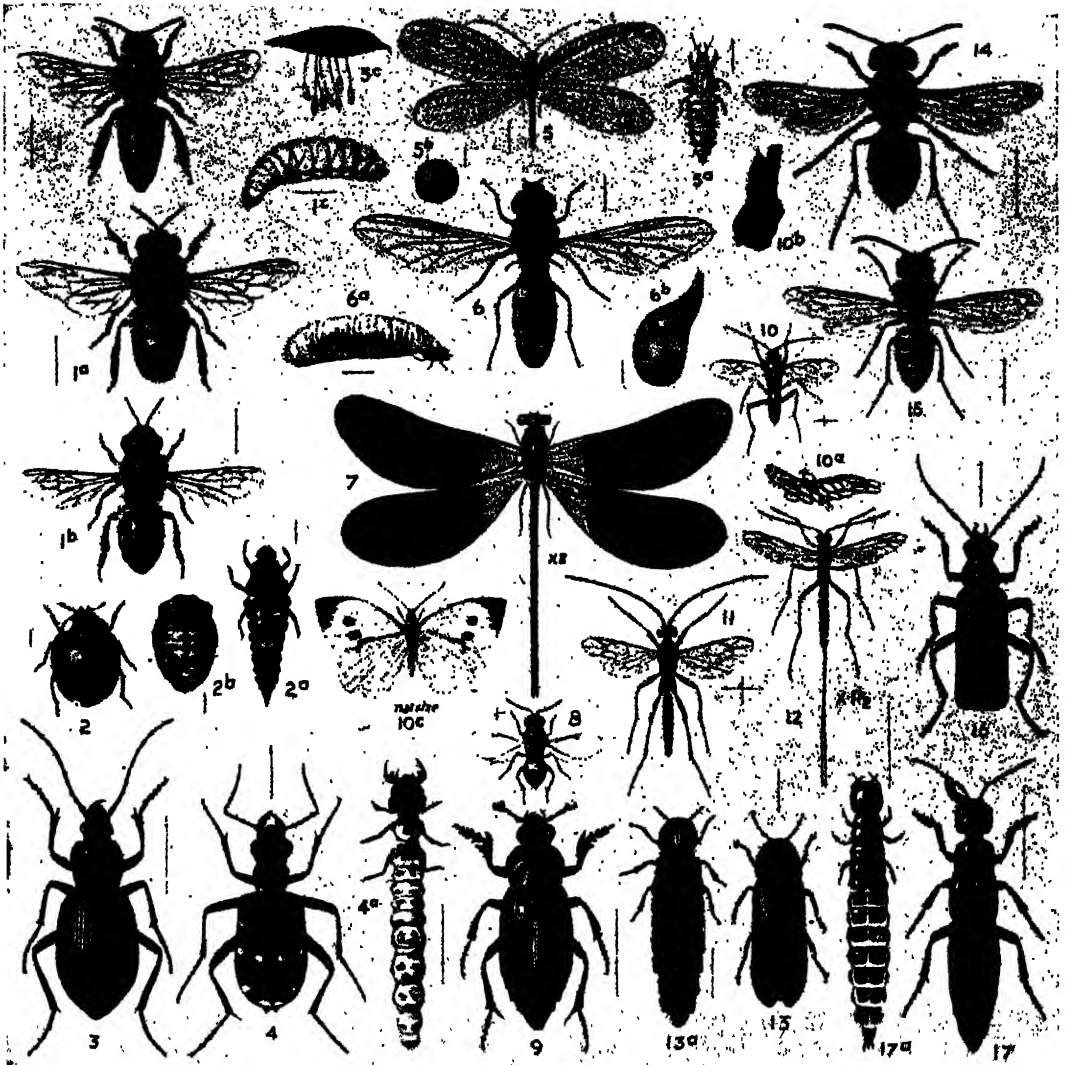
3. *GROUND BEETLE*. These beetles run about the ground and have lost the power of flight which most beetles possess. They are carnivorous, both in the larval and adult stage, and thus rid the soil of many

noxious insects, slugs and snails. They have thread-like antennae. (The form of antennae is used in classifying beetles.)

4. *GREEN TIGER BEETLE*. Both stages feed on insects voraciously, the adult roaming in search of them, but the larva digging itself a pit, in which may be a foot deep, waiting at the top for its victims, which it draws into the burrow to devour. Note the bent form of the larva, the broad, hard head (said to be used like a bricklayer's line), carrying earth up from the burrow and throwing it out) and the hooks on the abdomen which seem to help it to grip the sides of the burrow, like the earthworm's bristles. The adult has thread-like "horns" and a rather rectangular body.

5. *LACE-WING FLY*. Fly, larva and pupa, and eggs attached to a lime leaf by slender stalks. Adult transparent, and eggs so small that they are often overlooked though fairly common. Greenish, with golden eyes. Four wings. Attracted by lights to houses, like moths. Larvae light brown, bristly, and often covered with remains of skins of aphides they have eaten for larvae and adults both feed on these.

6. *HOVER FLY*. Various species. The one illustrated is banded with black and yellow, the warning colours usually associated with a sting. They have no sting, however; this is supposed to be a case of protective mimicry, the colour resemblance to a wasp giving a defence against birds. They differ from wasps and bees in having only one pair of wings, and in not having the abdomen constricted just behind the thorax to form a "waist." The hovering movement is produced by very quick beating of the wings, enabling them to stay in one position for several seconds. The adults feed on pollen, and are particularly fond of Michaelmas daisies. They help in fertilising flowers, but their great service to man is performed by the larvae, which feed voraciously on greenfly and other aphides. The larva (grub or



HELPFUL INSECTS

maggot) has a large, swollen, almost transparent body and small head, so that it suggests a sack being dragged along by a dwarf. The pupa might be mistaken for a very small slug, greyish-brown in colour and lightly striped, usually in a humped-up position between leaves. Both maggots and pupae may hibernate amongst dead leaves. It is said that one larva will kill one thousand aphides during that stage of its life.

7. DRAGONFLY. The dragonfly figured here is *Callopteryx* sp. Like all the dragonflies, in the adult stage this insect feeds on the wing, on flies chiefly, and therefore helps to keep down the numbers of these injurious insects, many of them disease carriers. It is important to note that dragonflies are harmless as well as valuable, because many are killed under the impression that they are "horse-stingers." They have no sting.

8. *CHALCID FLY*. These are minute parasitic insects, closely related to the ichneumons and similar in habit. There are many of them; some attack wasps, some moths, and a few attack plants. Frequently they are of brilliant metallic colouring. It should be noted that very minute insects *may* be useful, and should therefore not be killed without further inquiry. The one figured, *Encassia formosa*, attacks and controls greenhouse white fly, and is therefore of great value to nursery gardeners.

9. *BURYING BEETLE*. A useful scavenger, helping to bury the bodies of rats, mice, birds and other small animals, upon which it feeds after digging away the ground from under them until they sink and are covered by the soil. Incidentally, the parts which the beetles do *not* devour eventually enrich the soil with nitrates. There are many different burying beetles. Club-horned.

10. *BRACONID FLY*. These again are minute forms related to the *Chalcids* and *Ichneumons*, and of similar habit. The one figured is a parasite on the cabbage white caterpillar. Its larva lives inside the caterpillar, emerging to pupate when the caterpillar also is just ready for pupation. The host thus lives as long as the braconid needs it, one of nature's marvels. The pupae are enclosed in small, cylindrical cocoons of yellow silk. The "flies" are black, and waisted. Another braconid, fairly common as a parasite inside magpie moth caterpillars (destroyers of currant and gooseberry leaves), causes a distorted black and white (instead of black and yellow) pupa to be formed, from which no moth emerges.

11. *ICHNEUMON FLY*. There are many ichneumon flies, some very small, some large. They belong to the same order of insects as the bees and wasps, and have four wings and a narrow waist. Their general habit is to lay eggs inside the body of some other insect, in the larval stage or even in

the egg; the grub lives parasitically, keeping pace with its host, and eventually kills it, when the parasite is ready to pupate. The ichneumon figured is a species of *Rhyssa*, which attacks the larva of one of the wood-boring wasps, *Sirex*. Since these larvae cause very great damage to pine wood, the parasite *Rhyssa* is of assistance to the owners of forest trees. The adult female *Rhyssa* searches over the surface of a tree trunk, and possibly by smell, detects the presence, deep inside, of a *Sirex* grub. She then bores down with her needlelike ovipositor (egg tube) and deposits an egg close up to the grub. The egg hatches and lives, in this case, as an *external* parasite on the *Sirex*, eventually killing it.

12. *ICHNEUMON* (*Limneria gracilis*). This lays its eggs on the larvae of the diamond back moth which attacks turnips, and is therefore useful in checking its spread.

13. *GLOW WORM*. Male and female. These are chiefly known because the female beetle carries a light to attract the plain brown males, but they are useful because the larvae feed on small snails. The adult beetle is only about $\frac{1}{2}$ in. long, with serrate (saw edged) "horns." Under the tip of abdomen the female (and to a very slight extent the male) produces a phosphorescent substance which gives a bright, soft greenish light. Active, especially on still, warm nights from early dusk onwards, on damp, grassy banks. The light is intermittent.

14. *HORNET*. Of similar habits to the wasp, the hornet is much larger, handsomer, and more terrifying in appearance. Its sting can be dangerous, but undoubtedly on the whole, like the common wasp, it is valuable in keeping down caterpillars which would injure crops.

15. *WASP*. The common wasp, not generally held in high regard, undoubtedly pays its way by killing large numbers of

caterpillars. It is true that wasps take heavy toll of fruit, but doubtful if they can gain entrance if perfectly sound. Usually they feed on fruit which has been pecked by birds. However, their usefulness depends on their numbers being strictly limited particularly in seasons which are favourable to them. Caterpillars and other insects are stored as food for the larvae.

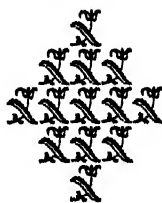
16. "SOLDIERS AND SAILORS."

Bright red and blue ground-dwelling beetles feeding on larvae, slugs, earthworms.

17. *DEVIL'S COACH HORSE*. Another carnivorous beetle which helps to keep down insects in the soil. As many insects (such as the turnip fly) which attack plants spend part of their time in soil, the various carnivorous beetles are of high value to the gardener and farmer. Another name for the devil's coach horse is the rove beetle from its roving habits. It is rather primitive, and

its narrow shape suggests a larva rather than an adult beetle, especially as the very short wing cases (*elytra*) expose more of the body than is usual and so show the segmentation. The abdomen is supple, and frequently tilted up, thus giving it yet another popular name, the cock-tail beetle. It is dull, sooty black, and very jaunty-looking. Its "horns" or antennae are clubbed. The underground larva is not nearly so frequently seen as the adult.

Although many beetles are of great value to farmers and gardeners others are injurious to crops. It is therefore of importance to be able to distinguish as many as possible, both in the larval stage and the adult. The larvae of beetles are long and segmented, with sharp, curved jaws for biting, and a flat head. They may be active, if they are carnivorous, or very sluggish if they need only to crawl slowly in search of plant food, but not all active larvae are beneficial or *vice versa*.



SPEAK PLAIN AND TO THE PURPOSE

SECTION ONE—SPEECH-TRAINING



I am L
Long, lazy fellow,
I'm lean and sleepy
And play on the 'cello.



SPEECH-TRAINING

INTRODUCTION

IN ALL work associated with speech-training, drama and mime, the teacher should guide and encourage, not dictate. Throughout the lessons there must be a constant appeal to the child's imagination and encouragement given to create for himself. Speech-training produces clear articulation and a free, easy voice; it aids oral expression and stimulates interest in vocabulary.

The lessons in this section have been planned to cover verse-speaking, reading aloud, story-telling and many other issues, for when the child has been trained and encouraged to speak plainly, ample material must be provided and full opportunity allowed for the child to satisfy his urge to speak. Speech-training can be correlated with several subjects of the curriculum; it is usually associated with the English course and should be an essential part of it.

The child himself should be the centre of all the lessons and upon his needs and individual development rest the arrangement of the work and the choice of material. When large classes are unavoidable, the needs of the group must be considered and the work arranged as its progress dictates.

VOICE

The motive force of voice is breath. After stance has been corrected and unnecessary tension removed from the body, breathing exercises should be given. If the room is not airy, the windows should be opened. Then exercises to increase the capacity and control of the breath should be arranged, so that the maximum demand made is well within the capacity of the weakest breather. These

exercises should be slow and rhythmical. Every now and then the shoulders and head should be moved to prevent stiffness. Breathing exercises, informal ones for the younger age groups, are introduced into the speech-training lessons.

Breath is used alone to make some sounds; these are the "breathed consonants." They are easily distinguished from the "voiced consonants" as, during the latter, vibration can be felt if the fingers are placed lightly on the throat at the larynx. For example, *t* is breathed; *d* is voiced. Again, *f* is breathed; *v* is voiced.

All vowel sounds are made with "voiced" breath.

To articulate a consonant, the stream of breath or voiced breath is interrupted in some way. Sometimes the interruption is complete; then the breath is released in a little explosion. *p* is an example of this. These sounds are PLOSIVES. In English there are six—*p, b, t, d, k, g*.

In the majority of English sounds most of the breath escapes through the mouth. In the case of three consonants all the breath goes out through the nose, because the way out through the mouth is completely blocked. These sounds are NASALS and they are—*n, m, ng*.

All other consonants can be grouped together as CONTINUANTS. Unlike the plosives, these consonants, as the name implies, can be continued. They are—*f, v, th* (breathed and voiced); *l, s, z, sh* (and voiced *sh* as in the word "azure"); the two sounds for *r* (the frictional sound as in "friend," and the *r* that is almost rolled as in "spirit"). If you find the second sound difficult to locate, listen carefully to the *r* sound made between vowels by a good speaker.

A simple chart is shown of these sounds to make them clear to the teacher. When

consonants are taught, remember that it is more important to correct the sound and let the child hear the difference between a good and poor sound, than to describe its formation in detail. The organs of articulation—lips, tongue, jaw, and soft palate—can be exercised simply and often in play-form. After the exercises, the sounds specially concerned with those particular organs should be made in isolation, and then in words. The words should be introduced into speech through conversation. For example, after lip exercises, *p* and *b* should be made; after tip-of-tongue exercises, *t*, *d*, *s*, *z*, *r*, or *l*.

Vowel sounds are made by shaping the outgoing stream of voiced breath. This is easily tested by making a vowel sound and then changing the position of the articulatory organs, especially the lips and tongue. The chart shows that certain vowels are chiefly concerned with lip position—*ah*, *aw*, *oo*. For a longer list, look at the vowels in the words—

part,
box,
bought,
know,
put,
wood.

(*ah* is the starting-point for both lip and tongue positions.)

Other vowels are effected by the position of the tongue—*ah*, *aye*, *ee*—or the vowels in the words—

part,
must,
burn,
land,
pen,
lake,
his,
cheese.

When making any vowel sound, the tip of the tongue should be touching the back of the lower teeth.

The pronunciation of words is of less importance than the production of good clear sounds. The aim of the teacher is to

train the voice to be sound from a physiological standard and for the child to speak audibly. Clear speaking encourages fluent expression of thought.

If children suffer from stammering or other speech defects, they should be sent to a speech therapist. Local education officers will be able to inform teachers where the speech therapist is working in the district. Slight lisps will sometimes disappear after tongue and lip exercises have been practised. Children with speech disorders are often nervous and very sensitive. They need sympathetic treatment to help them overcome their defect. Speech therapists are anxious to work with teachers; in fact, a cure depends on close co-operation between school, home, and the speech clinic.

The tone and volume of the voice will be helped by humming exercises, singing scales, and speaking phrases in many different ways. Not only words should be practised, but animal and mechanical noises should be attempted.

Voice and speech exercises are a "warming-up" measure, and use of the voice should follow. Verse and prose yield a rich harvest, but in addition the children should be helped to converse, relate incidents and tell stories. With the younger ones, word-games can be played.

AGE GROUP SEVEN TO EIGHT

Speech-training at this stage should be presented so that it is almost incidental.

Lesson 1

Read the children the story of *The Little Cat that could not Sleep*. This story is excellent for the purpose, because it suggests ease and a restful atmosphere.

Question the children and ask them to tell the names of the animals in the story.

Discuss the appearance of two or three of these animals. Ask what sounds or noises they made. Let all the children make the sounds together.

THE LITTLE CAT THAT COULD
NOT SLEEP

Once there was a little cat who wanted to stay awake all night. So she pretended that she could not sleep.

She was a polite, gentle cat, but she made all her friends uncomfortable because she was so restless.

She used to go walking around, and walking around, waving her tail. . . .

One evening, when the farmer milked his two cows and the farmer's wife came out of the house with a pail full of milk for the cat family's supper, Little Cat decided that she would stay awake all night.

The mother cat and all the kittens lapped and lapped the milk until it was gone. Then they went back to the barn and settled down on the hay and went to sleep, all but Little Cat.

Little Cat was getting sleepy, too, but she would not lie down. She rubbed her eyes and said, "I shall stay awake all night!"

So Little Cat walked out of the barn and up the hill to the house.

She watched the big dog lie down on the porch, put his head on his paws, close his eyes and go to sleep. But Little Cat thought, "Not I! I shall stay awake all night!"

Little Cat ran down the hill again and tried not to count the sheep as they walked through the farmyard gate to their shelter for the night. They all settled down and went to sleep.

"But not I!" said Little Cat, "I shall stay awake all night!"

She watched the horses, and the cows, and the pigs go to sleep, but although she felt sleepier and sleepier herself, Little Cat said, "Not I! I shall stay awake all night!"

But it is not much fun to stay awake all night unless you have some company. By this time all the animals on the farm were sound asleep and there was no one for Little Cat to talk to.

She decided to go to the Zoo and visit some of the animals there. Surely there would be some other animal from around

the wide world who liked to stay awake all night!

On the way she saw a robin in a tree. The robin was asleep with his head under his wing. She saw two rabbits sleeping rabbit-fashion in the grass, and a squirrel sleeping in a hollow post of the roadside fence.

Pretty soon, Little Cat came to the Zoo. The first animal that she saw was the African wildcat. It was a beautiful animal and looked like Little Cat's mother. At first they gazed at each other. Then the wildcat yawned and closed its eyes. It tucked its head close to its body, and began breathing up, down, up, down, and then it was fast asleep.

Little Cat blinked her eyes wider open and walked away fast.

Near by in their cages, the porcupines were lying, stretched out, asleep with their noses pointing into the corners.

Little Cat walked away quickly. The raccoons in their cages were fast asleep in queer positions.

"Well! Well! that's strange," said Little Cat.

And she walked on.

Next Little Cat watched the opossums settle down for the night. They, too, slept in all sorts of positions.

One opossum curled into a ball and put his head under his hind leg.

Little Cat could hardly keep her eyes open when she saw those opossums sleeping . . . sleeping. . . .

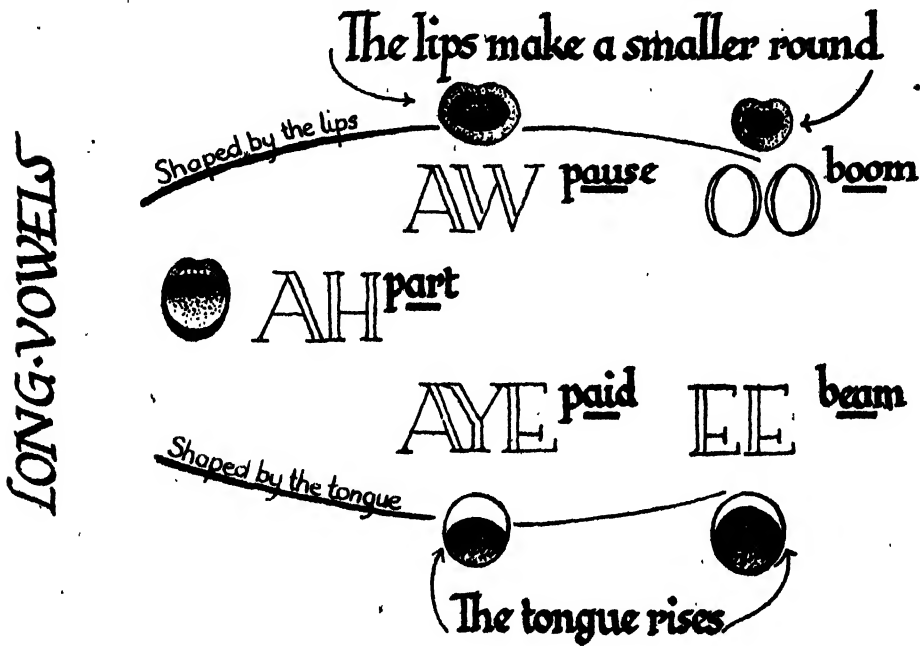
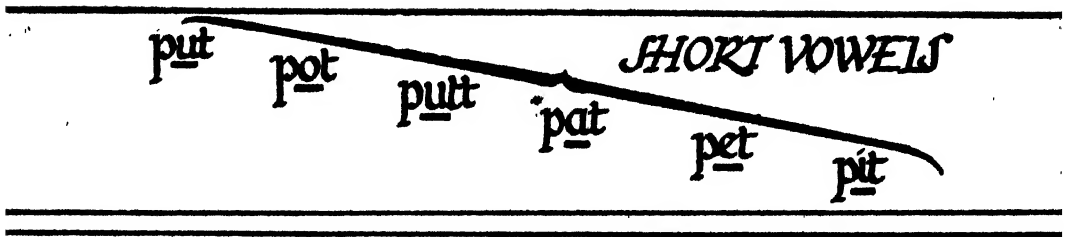
She ran all the way to the skunks' cage to keep herself awake.

All the skunks were sleeping soundly, flattened out like fur rugs. Little Cat shook herself and walked on as fast as she could.

Little Cat watched the tigers. They yawned terribly before they curled up and went to sleep with their heads towards their hips. They then began breathing up, breathing down, breathing up and breathing down.

And still Little Cat was wide awake.

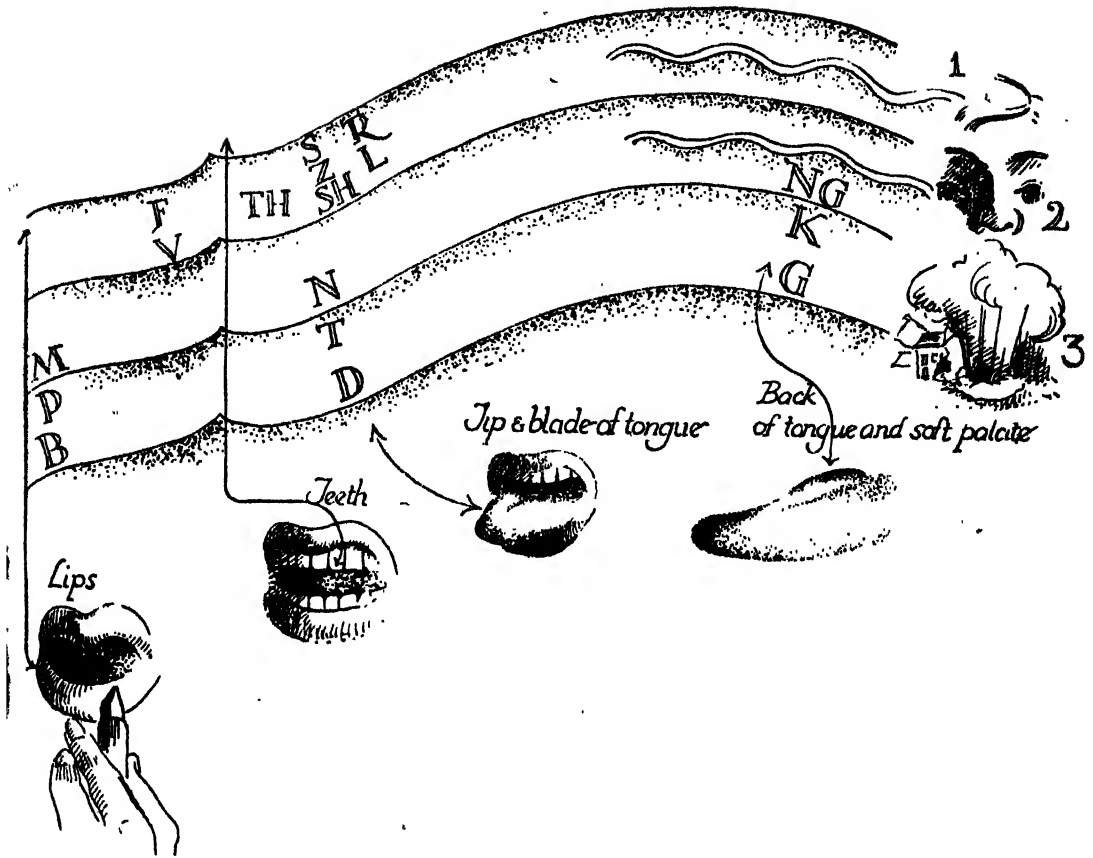
Little Cat visited the deer, but they were already sound asleep. Some were lying with their legs under them. Some were



There is a slight movement during some vowels:—

SIGH · LOW · BOUGH · FAIR · SHEER & JOY

VOWELS



1. Continuous
2. Continuous, coming out through nose
3. Explosives

Also practise the following sounds:—

tsh (church) w (was) h (house)
 dzh (judge) y (yours)

CONSONANTS

dreaming with their heads straight out. Others slept with their necks curled back and their heads towards their hips, all sleeping, sleeping, sleeping. . . .

"Isn't anyone in this whole Zoo staying up to-night?" Little Cat wondered. But no one was. The hippopotamus was lying flat on its stomach with its head straight out in front, resting on the ground, asleep.

The monkeys were curled up, or stretched out, or lying on their stomachs or on their backs.

Their eyes were all shut tight and they were all asleep.

The camels were lying down with their four legs folded under them, sound asleep.

"Umph!" said Little Cat, and walked away, waving her tail.

Stepping high, and still wide awake, Little Cat went to see the elephants. By this time it was after sunset and beginning to grow dark. Three young elephants were lying down.

Other elephants stood with their trunks lying on the ground and they, too, were sound asleep.

They stood first on one foot, then on another foot, on one foot then on another . . . moving, and swaying, and snoring.

Little Cat enjoyed watching them.

This is something like it, thought Little Cat. This is really fun. She tucked her legs under her body and cuddled down, so she could watch the show in comfort.

By this time Little Cat had forgotten that she intended to stay awake all night, because she was having such a good time.

With her bright eyes wide open, she watched the elephants swaying and moving, standing first on one foot, then on another, one foot, another foot, one foot, another foot.

One huge old elephant, with his trunk lying on the ground, began to snore louder than all the others put together.

He rocked from side to side, and from head to tail, from head to tail, while all the elephants were moving, swaying, snoring, rocking, one foot, another foot, one foot,

another foot, rocking, rocking, rocking, heads, tails, heads, tails. . . .

Next thing Little Cat knew she was purring and purring, and nodding her head to keep time with the elephants, swaying, rocking, snoring, one foot, heads, tails, heads, tails, while the twilight faded into darkness and the stars came out one by one. . . .

And in another half second, Little Cat was sound asleep!

Frances Margaret Fox.

Lesson 2

ASK the children to tell you the story of Little Cat. They can pick it up from one another. Probably some of the animals will be left out, so refer to the story again and read out the descriptions—for example, 'all the skunks were sleeping soundly, flattened out like fur rugs.'

Let the children choose an animal, and curl up like it. Whilst they are curled up they can decide on their names. Then they say them all round the class. The first name must begin with the same initial as the surname:

Larry Lion,
Ethel Elephant,
Susan Squirrel,
Willie Wildcat.

Lesson 3

To-day, Little Cat is going on another adventure.

It is morning and she dashes down the lane. Suddenly she sees a big cloud on a green stalk over her head. It is a dandelion in full seed. Little Cat blows it. All the children pretend to be Little Cat and blow the dandelion very gently and easily. Now blow with two or three sharp little breaths.

Little Cat went on the heath. There she found some large blue harebells. Being a curious Little Cat she rang them. They said, "Ding, dong," very faintly at first, but

growing louder. All the children be the harebells and ring in this way:

"Ding, dong; *ding, dong*; DING, DONG; DING, DONG."

Some of them went, "Bom, bom," instead, and others went, "Clang, clang." At twelve o'clock the harebells say, "Gong," twelve times.

All these sounds can be practised.

Because the harebells have to keep time in order to know when it is twelve o'clock, they must say, "Tick tock, tick tock," all day.

Practise this as well.

Little Cat's last adventure was meeting a frog who went along saying, "Croak oak." And he went, "Plomp plomp," as he hopped along.

"Croak croak—plomp plomp—croak roak—plomp plomp."

To finish this lesson, all be the frog croaking and then say, "Plomp plomp," as an imaginary frog lands on marshy ground.

Lesson 4

Play with words during this lesson, and begin from CAT.

Ask the children to say words beginning with the same sound: cat, cotton, cool, rumps, coat.

Then say words which rhyme with cat, such as: bat, sat, fat, hat, flat.

When you think of a cat, what do you think about?

Cat—fur, purr, scratch, claws, mouse, milk.

Finish the lesson by thinking of nursery hymes about cats and saying them:

(1.) Pussycat, Pussycat,
Where have you been?
I've been to London
To visit the Queen.

(2.) Ding dong bell,
Pussy's in the well!
Who put him in?
Little Johnny Thin.
Who pulled him out?
Little Johnny Stout.

Lesson 5

From now onwards, in each lesson include a game or little play-exercise to introduce the following:

(a) Breathing.

(b) Humming.

(c) Singing a scale or little tune.

(a) No attempt should be made to attain large capacity or marked control at this stage. The breath that is there should come out freely and without tension anywhere.

Blow out imaginary matches.

Blow an imaginary candle flame steadily, so that it bends but does not flicker.

Blow a feather and keep it in the air.

Blow imaginary soap bubbles.

(b) Make the noises of various aeroplanes. (Many small boys have a knowledge on this subject which proves humiliating to the average adult.)

Pluck the lips during humming and make it sound like a musical instrument.

If excessive noise is not disturbing to the rest of the school, humming through a comb covered with tissue paper is a quick method of getting vibration forward on the lips.

Buzz, pretending to be bees—alone at first and then in a swarm.

Make gnat noises on *n*.

(c) If a piano is available, accompany the exercises on it to help pitch.

Make up another Little Cat story and bring in breathing, humming and tunes. Young children like to keep to the same theme, but another character can be added if wished.

One day Little Cat is taken by the boy on the farm to a camp concert. Little Cat is very much interested and sits on the branch of a tree watching the proceedings intently. The boy and his friends gather sticks, put them together, and try to light a fire with a match. They blow out the match. They try again, taking longer this time. The fire needs encouraging, so they blow the flame gently. It is evening and Little Cat can hear the last bee buzzing to a flower before going home—*buzzzz, zzz, zz*. The gnats come from

a pond close by and quietly say—*nnnn*, *nnnn*, *nnnn*. Then the boy and his friends hum a tune, and, after saying the words, they sing them. Little Cat ends the concert by joining in with—*miaow*, *miaow*, *miaow*; and *prrr*, *prrr*, *prrr*.

Lesson 6

One day, Little Cat is taken to London on a visit. She sits on the window-sill, and during the morning she hears people shouting in the streets. This is something she has never heard in the country, so she listens very hard and first of all she hears:

"Penny pies all hot! hot! hot!"

Then other cries throughout the morning:

"Buy 'em by the stick, or buy 'em by the pound,
Cherries ripe, all round and sound."

"If I'd as much money as I could spend,
I'd leave off crying 'Old chairs to mend.'"

"Muffins, oh! Crumpets, oh!
Come buy, come buy of me!"

"Any knives or scissors to grind to-day?
I'll do them well, and there's little to pay!"

"Lavender, sweet lavender!
Who'll buy my lavender?
Sixteen branches for a penny!"

Everyone practises these cries, then each child chooses one of them and says it alone.

From this, build up the lesson with one of the children being Little Cat, purring and saying *miaow*. The cries begin faintly, become louder when they pass under the window, and fade away into the distance again.

AGE GROUP EIGHT TO NINE

Lesson 1

Children have a marked innate sense of rhythm, and playing with different rhythms can form the basis of a number of lessons.

For example, a lesson can be planned in the following way:

Everyday rhythms are brought to the notice of the class.

The sounds are produced onomatopoeically.

The sounds are produced in rhythm and other words added; for example, the old favourite of a dinner menu spoken backwards to represent a train noise.

A stanza is written by the children, introducing a rhythm. This is the report by a teacher of a lesson he gave carrying out these suggestions for a class of children of eight years of age.

I started by suggesting that the class should think of word methods of describing the various sounds we hear every day. They responded with a series such as *clip-clop* *bwm-bwm-bwm-bwm*.

I then spoke the rhythm *clip-clop* without any semblance of regular intervals. The class soon corrected this, and, that I might know how it should be done, I went rapidly round the class, each one saying only on *clip-clop*, but endeavouring to maintain a regular beat. This was not achieved on the first attempt.

We then dealt with their other rhythms *pitter-patter*, *cho-cho-cho-cho-cho*, etc.

On the board I then compiled a menu for a dinner from the suggestions of the children selecting the various items for their rhythmic qualities:

Soup
Sausage and Chips
Ice Cream Sundae
Cheese and Biscuits
Coffee

The children were unable to see any possible rhythm which might be attached to this, but were most enthusiastic when was spoken from bottom to top and back train rhythm, the soup being used as the whistle. (The children could be seen playing trains in the playground to the rhythm the menu during the afternoon break.)

The children were very eager in the writing of lines of rhythmic verse on the various topics that they had suggested. The results varied from very good to bad, but in many cases the products were worth speaking chorally for their rhythmic qualities.

A donkey came walking down the street,
Clip-clop, clipperty-clop.
Someone covered him up with a sheet,
Clip-clop, clipperty-clop.
Thinking they had caught a ghost,
Clip-clop, clipperty-clop.
They tied him to a telegraph post,
Clip-clop, clipperty-clop.

The night is dark but the sky is clear,
Woo-oo-oo-oo!
The planes will soon be very near,
Woo-oo-oo-oo!
The lights will go on and search the sky,
Woo-oo-oo-oo!
The babies will begin to cry,
Woo-oo-oo-oo!

In both of the above cases the first two lines were given to the children as a guide. Some help was required to keep the metre within reasonable limits, but, apart from that, the remainder is the work of the children. The ideas are not always consistent, as shown by the first example, but the second shows what might be expected from eight-year-olds, for what has been done once, can be done again.

Lesson 2

Rhythm can be developed by speaking various consonant sounds at different times. Practise the sounds *d*, *v*, and *sh*. When they can be clearly made in isolation practise them together:

d v sh
den d v . sh
den d . v sh

Try other sounds:

f r pp
f r pp

f . r p . pp
(Roll the *r*.)

Then:

l g h m
l . g h . m
l . g . h m . m

When speaking the sounds, make them without an *er* after them—*d*, not *der*.

Lesson 3

Nursery rhymes are fun to use for rhythm exercises:

Three blind mice!
See how they run!
They all run after the farmer's wife,
She cut off their tails with a carving knife,
Did ever you see such a thing in your life,
As three blind mice?

Ask the children to speak the rhythm slowly and quietly until they can do so accurately. Then increase the rate and volume. The word *blind* is often spoken without the final *d*. This *d* should not be exaggerated. The *z* sound at the end of *farmer's* is inclined to be *s*. Under the influence of the following word *knife*, *carving* is apt to be spoken as *carvin*. Another popular pitfall is speaking *sight in*, as *sightin*.

Choose another nursery rhyme and work on it along the same lines:

Little Bo Peep
Has lost her sheep
And doesn't know where to find them.
Leave them alone
And they'll come home,
Bringing their tails behind them.

Lesson 4

Run through the two rhymes used in the last lesson, *Three Blind Mice* and *Little Bo Peep*.

Ask the children to suggest words which they connect with the sound of mice moving in a room—*scamper*, *scratch*, *nibble*.

Suggest that one of these words should be whispered so that it sounds as though the mice are there—*scamper, scamper, scamper*.

Then count the mice—ONE, TWO, THREE.

One is said quietly, two more loudly, and three very loudly and for a long time.

Then say the rest of the line—*blind mice*.

In the next line, *see how they run*, let different children say *see* on pitches coming down the scale—

see

see

see

see

How they run is then said softly and quickly.

In the line *they all run after the farmer's wife*, the *n* in *run* is held—*runnnnnnn*.

One girl can be the farmer's wife and speak fiercely the line: *She cut off their tails with a carving knife*.

The line: *Did ever you see such a thing in your life?* is a lamenting line.

As *three blind mice* can be said with a little pause after *three* and *blind*.

Then finish up with the mice scampering away.

The finished rhyme is:

Whisper:

Scamper scamper scamper scamper

ONE

TWO

THREE . . .

blind mice.

Down scale:

See

see

see

see

how they run.

They all runnnn after the farmer's wife.

Solo:

She cut off their tails with a carving knife,

Lament:

Did ever you see such a thing in your life
As three . . . blind . . . mice?

Whisper:

Scamper scamper scamper.

Ideas about playing with these rhymes will spring readily from the children and their suggestions should be used.

Lesson 5

Continue to work on nursery rhymes, and use the association and onomatopoeic words to make up the little word scenes.

Here are the results of a group working on *Humpty Dumpty*. The sounds of the king's horses and men were made by *clipperty-clop*, and *tramp, tramp, tramp*.

Beginning faintly and far away and becoming louder:

Clipperty-clop, clipperty-clop,
Tramp, tramp, tramp,
Clipperty-clop, clipperty-clop,
Tramp, tramp, tramp.

All:

Humpty Dumpty sat on a wall.

Solo:

Hallo, Humpty Dumpty!

Down the scale:

Ooooooooooooooooooooooh!

Humpty Dumpty had a great fall.

All the king's horses

Very quickly:

Clipperty-clop, clipperty-clop,
And all the king's men,

Very quickly:

Tramp, tramp, tramp, tramp;
Couldn't put Humpty together again.

Solo:

The pieces won't fit!

All:

Poor Humpty Dumpty!

Besides establishing a secure sense of rhythm, this work allows imaginative play.

and practice on clarity of words and flexibility of tone.

From simple suggestive words the children will proceed to make up phrases. Most of these are colloquial and so present an admirable opportunity for practice in fluency and clearness.

Little Miss Muffet on one occasion began with the phrase: *Have you heard about Little Miss Muffet?*

Solo:

Have you heard about Little Miss Muffet?

All:

She sat on her tuffet
Eating her curds and whey.

Slowly and horrifyingly:

There came a big spider
And sat down beside her!

Solo squeak:

Ooooooh!

All:

And frightened Miss Muffet away.

Take a rhyme already practised: *Little*

Bo Peep.

Faintly:

Baa! Baa! Baa! Baa!

Bo Peep:

Oh dear, I've lost my sheep!

All:

Isn't she sweet?
She's lost her sheep!

Bo Peep, calling:

Daisy, Buttercup, Mopsy!

All:

Little Bo Peep
Has lost her sheep
And doesn't know where to find them.
Leave them alone
And they'll come home,
Bringing their tails behind them.

Fainter and fainter:

Behind them!

Behind them!

Behind them!

Louder:

Baa! Baa! Baa! Baa!

Bo Peep:

Oh! I've found my sheep!

Simple Simon gave rise to a long discussion on pies and their price. Many bought his wares.

Clang-clang! Clang-clang!
Pics all fresh!
Half-a-dozen please, pieman!
Good-morning, pieman, three please!
Can you change two shillings?

All:

Simple Simon met a pieman
Going to the fair.
Said Simple Simon to the pieman,

Solo:

"Let me taste your ware."

All:

Said the pieman to Simple Simon,

Solo:

"Show me first your penny."

All:

Said Simple Simon to the pieman,

Solo:

"Alas, I haven't any!"

Lesson 6

More difficult rhymes can now be attempted. *Old Zip Coom* is a good example in which the rhythm establishes itself easily, and plenty of practice on sounds is given:

There once was a man who could execute
Old Zip Coom on a yellow flute,
And many another tune to boot,

But he couldn't make a penny with his
tootle-ti-toot,
Tootle-ootle-ootle, tootle-ti-toot!

One day he met a singular
Quaint old man with a big tuba,
Who said he'd travelled wide and far,
But he couldn't make a penny with his
oom-pah-pah,
Oom-pah, oom-pah, oom-pah-pah,
Tootle-ootle-oom-pah, oom-pah-pah!

They met two men who were travelling
With a big bass drum and a cymbal thing,
Who said they'd played since early spring,
But they couldn't make a penny with their
boom-zing-zing,
• Boom-zing, boom-zing, boom-zing-zing,
Tootle-ootle-oom-pah, boom-zing-zing!

The man with the flute went tootle-ti-toot,
And the other man he went oom-pah,
And the men with the drum and the
cymbal thing
Went boom-pity-boom-boom, zing-zing!
And oh! the pennies that the people fling
When they hear the tootle-oom-pah, boom-
zing-zing!
Boom-zing, boom-zing, boom-zing-zing,
Tootle-ootle-oom-pah, boom-zing-zing!

The children can be divided into *tootle-ootles*, *oom-pahs*, *booms*, and *zings*, and each sound must come in strictly to time. Take care in this poem that the metre (as apart from the rhythm) is not stressed to the detriment of all else.

This poem was successfully made into a puppet play.

Here is a report of a lesson based on it.

Introduction:

The teacher read out the poem emphasising the rhythm and articulation.

Development:

(a) The children read the poem through (very badly) and then the onomatopoeic words were concentrated on as an articulatory exercise.

1. *Tootle-ti-toot*. Slowly at first, working up to train rhythm. Care should be taken that the *ti* is not turned to *di* or to *i* in this particular exercise.

2. Practice followed on the nasal and plosive in *oom-pah*, to the tune of the chorus of *Upidee*: *Oom-pah, oom-pah, oom-pah-pah, oom-pah-pah, oom-pah-pah*, etc.

(b) Next came conducted reading to establish the required rhythm for the whole.

(c) Then followed grouping for the onomatopoeic words, each group taking its own part each time it occurred:

- 1st verse: *Tootle* group
- 2nd verse: *Oom-pah* group
- 3rd verse: *Boom-zing* group
- 4th verse: *All*.

Class Observations:

1. It is easier to speak quietly than rowdily.
2. We like it and we *want* to learn it.

AGE GROUP NINE TO TEN

As the individuals in a class vary in character, so they will vary in their response to different methods of presentation. But whatever the age of the child, he will always appreciate the pictorial version of a subject.

The picture which has been drawn by the teacher will naturally appeal the most, and it cannot be over-emphasised that great artistic ability is not necessary for this type of work. There is no suggestion of "illustrating" poems, but of helping understanding by visual means and leading on to the important part that the visual arts play in drama. Printed illustrations are fairly readily obtained, though care and discrimination must be exercised in their choice. They may be reproduced by the teacher on an enlarged scale, if necessary by the "squaring" method as used for enlarging maps. Or they may be used for montage illustration, as described in the paragraph on programmes and posters in the drama section.

An illustration serves the valuable purpose of being an extra stimulus to the child's awakening imagination and vision: actual drawing and painting, as well as stimulating imagination and holding interest, gives a inter to the child's imagination. Just as a child will most readily appreciate the illustration which has the personal touch imparted to it by the teacher, so he will value it still more if encouraged to contribute himself to the illustration.

A good example of the correlation of art and oral expression is afforded by the following example of work done in a London school. A consonant sound was chosen and the girls made up a rhyme employing the sound. Fresh ones were added week by week and old ones practised. A sequence was collected by the end of a term's work. Examples from it are:

I am G.
I'm great and grand,
Galloping in glory
To the gay Guards' band.

I am K,
A clever, quick crook,
I collect all my secrets
In a creepy black book.

I am L,
Long, lazy fellow,
I'm lean and sleepy
And play on the 'cello.

These rhymes afforded practice in the sounds in various positions in the word, and the case of *k*, for example, led to a discussion of the fact that a sound can be represented in more than one way. The capital letter was then written on the board and suggestions made by the girls about the person who should be drawn to illustrate the letter. The drawings were vigorous and full of ideas. They are presented here in a simplified form, but the main idea came from the girls themselves.

On these lines, plan the first six lessons in this age group.

Lesson 1

For the first lesson choose *sh*.

Ask the children what they would expect others to do if they said *sh*.

Practise the sound.

Ask for words in which the sound occurs.

Select some of them—*shore, cushion, shady*.

What association springs from these words?

Shore... sea... sand... shells... waves...

Begin to make up the rhyme, using the words and illustrating them in the way suggested.

Lesson 2

Choose *m* for this lesson and introduce the idea of humming.

Hum up and down the scale.

If the idea of music and humming can be used in the rhyme, a little tune could be hummed at the end.

Lesson 3

Give a few tip-of-the-tongue exercises to encourage a good *t* sound. Be sure the sound has a clear release and is not followed by too much breath.

Tip-of-the-tongue exercises:

1. Put out the tongue and point it. Use a mirror to see whether it has a good hard point.

2. Move the tongue, still pointed, up and down; then from side to side.

3. Drop the jaw and keep it open. Move the tongue up and down inside the mouth, alternately touching the back of the lower teeth and the little ridge felt in the palate just behind the upper front teeth.

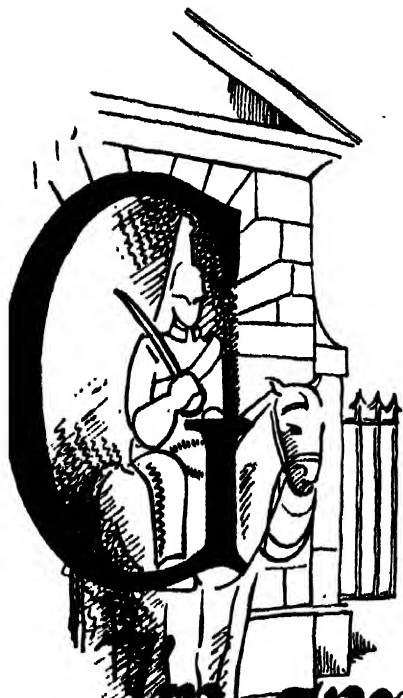
Lesson 4

Choose *f* for this lesson.

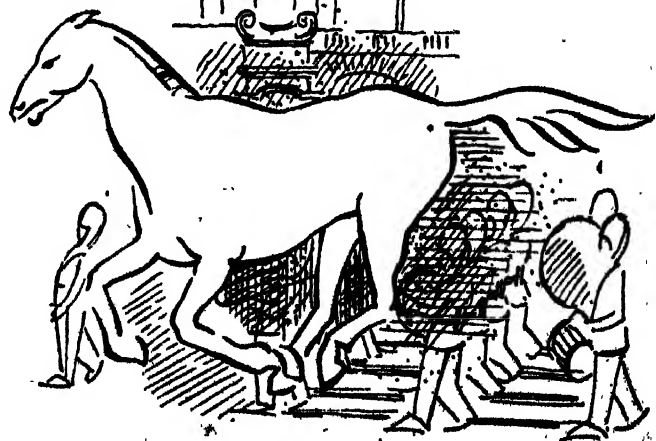
This is a good opportunity for introducing the fact that some sounds are made only with breath and others are made with voice.

Say *f* and continue it.

Say *v* and continue it.



I am G
In great and grand,
Gallop'ing in glory
To the gay Guards' band.





I am K

A clever, quick crook,
I collect all my secrets
In a creepy, black book.



Make these sounds alternately. If during the sounding of *v* a hand is placed gently on the throat, a vibration is felt.

Ask for other examples of these pairs:

t . . . d

k . . . g

p . . . b

Many others will be suggested.

Lesson 5

Choose *g* for this lesson and point out the fact that *g* cannot be continued. Most sounds can be, you can go on saying them, but *g* explodes and so finishes. What other sounds do this?

g, k, d, t, b, p.

Lesson 6

For this lesson choose *s*.

sh suggested words such as *shore*, and on the shore the waves made a long *sh* sound. Many sounds are suggested in words: *s* is found in many words suggesting *s* sounds; for example, *hiss, sea, whistle*. The children can suggest many more. Be sure that *s* is made as a neat, rather short sound, neither whistling nor too much like *sh*.

AGE GROUP TEN TO ELEVEN

At the beginning of each lesson a few simple breathing exercises should be given. The children should stand with their hands lightly resting on their lower ribs with the fingers turned under—see illustration. Counting by the teacher should be rhythmical and fairly slow:

In, two, three.

Out, two, three.

Repeat three times.

In . . . pause.

Out, two, three.

Repeat three times.

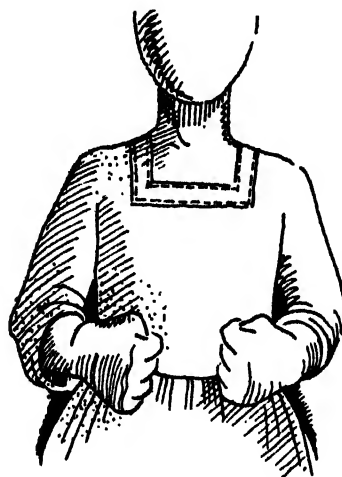
In . . .

Out, two, three, four.

Repeat three times.

The exercises should be arranged so that the time of intake is decreased and that of output increased.

Exercises should be initially in and out through the nose; then in through the nose and out through the mouth; finally in and out through the mouth. The outgoing breath can be used for humming, counting, or singing a vowel sound.



POSITION FOR BREATHING EXERCISES

Then counting can be done with a breath at regular intervals:

Breathe in, then out counting one, two.

Repeat.

Breathe in, then out counting one, two, three. Pause.

Repeat.

Breathe in, then out counting one, two, three, four. Pause.

Repeat.

Breathe in, then out counting one, two, three, four, five. Pause.

Repeat.

Breathe in, then out counting one, two, three, four, five, six. Pause.

Repeat.

The days of the week can be spoken with a breath taken between each one, thus:

Monday, breath, Tuesday, breath, Wednesday, breath, etc.

This can be varied as follows:

Sunday, Monday, Tuesday, breath, Wednesday, Thursday, Friday, breath. Pause. Saturday. Pause. Breath, Sunday, Monday, Tuesday, etc.

Teachers will be able to vary these exercises for each lesson—months of the year, the alphabet and rhymes can all be used.

Lesson 1

It will be presumed that by this stage all the consonants have been practised in isolation. This work can be developed by grouping the consonants, not only in rhythmic groups, but also to form nonsense words and noises.

Factory noises can be used in this way. The children work on the sounds *sh*, *l*, *m*, and *k*. They choose one sound and make up a noise which includes it:

shlik-shlik, shlik-shlik

llp-llp

Hummmm-Hummmm

krang-krang-krang

These noises can be made with varying rate and volume.

Lesson 2

Recapitulate the last lesson and continue with the work. Make a background of factory noises with it. The small soft sounds begin slowly and softly. The speed is increased and louder noises are included until the factory is working full pelt. Words can be introduced, such as orders from the foreman, and workers greeting each other.

Sounds in order of joining in:

k p k p k p k p

skidat skidat skidat skidat skidat

dd bb, dd bb, dd bb, dd bb

tsh tsh tsh tsh tsh

wahrum wahrum wahrum

shlweeshl shlweeshl shlweeshl

bong bong bong, bong bong bong

dang dang dong, dang dang dong

dawinng dawinng

Words:

You're late to-day—were you held up?

Look out for that belt!

Give me a hand with this, it's needed by five-thirty.

Lesson 3

Before practising vowel sounds, give exercises for the jaw, lips and tongue, and bear in mind the shaping of the vowels, some by raising the tongue, and others by rounding the lips. Frequent faults in forming vowels are that the jaw is not well open and is tense, and the sides of the mouth are drawn back.

If concentration is centred round one vowel a lesson, time is allowed for individual work with a child whose special weakness it is. When the vowel is made competently by all the children, a poem in which it occurs frequently can be used.

Suppose the vowel in the word *fly* is used.

In working on vowels with children the teacher should not worry so much about the accent with which the sound is made, but rather concentrate on the physiological standard of the sound. Is it a good ringing healthy sound, or muffled and swallowed? It would be a dull land if all of us spoke with a "standard" accent, but audibility and quality of tone facilitate communication and expression.

We will represent the vowel in the word *fly* as *i*. It is a "glide" or diphthong, or, to put it more simply, the speech organs move slightly whilst it is pronounced—whereas in "simple" vowels they remain steady.

Discuss how the sound can be written differently in words: by, likes.

Think of a list of words in which the sound occurs: spikes, night, sigh, bite, light.

Exercises:

1. Drop the jaw loosely, and then raise it.

2. Repeat, increasing rate.
3. Tongue exercises as previously suggested.
4. Lip exercises as previously suggested.
5. Open the jaw, place the tip of the tongue lightly against the lower teeth. Practise the vowels *ah*, *aye*, *ee*, by raising the tongue. Only whisper through these positions.
6. Now practise the lip sequence, *ah*, *aw*, *oo*, by rounding the lips as the sequence proceeds.
7. Do this without tightening the lips.
8. Stroke the corners of the lips forward.
9. Now make the sound *i*. The second part should not be unduly lengthened.

Now read the following poem:

WEATHERS

This is the weather the cuckoo likes,
And so do I;
When showers betumble the chestnut
spikes,
And nestlings fly:
And the little brown nightingale bills his
best,
And they sit outside at the "Travellers'
Rest",
And maids come forth sprig-muslin drest,
And citizens dream of south and west,
And so do I.

This is the weather the shepherd shuns,
And so do I;
When beeches drip in browns and duns,
And thresh, and ply;
And hill-hid tides throb, throe on throe,
And meadow rivulets overflow,
And drops on gate-bars hang in a row,
And rooks in families homeward go,
And so do I.

Thomas Hardy.

How many words are there in the poem with the sound *i* in them? Say these words: likes, I, spikes, fly, nightingale, ply, etc.

Now read the poem with special attention to these sounds, but not making them stand out in any way.

Lesson 4

Short vowels need practice because they are frequently not differentiated clearly. Take the vowel in *six*.

It is a sound for which the tongue is raised. Do the usual exercises and then practise the sound.

Think of phrases in which it occurs.

Wee Willie Winkie.

Dickory dickory dock.

Sing a song of sixpence.

Here we go round the prickly pear.

Proceed to the short vowels in the words:

pat, *pet*, *putt*, *pot*, *put*,

and treat them in the same way.

Lesson 5

Lessons can be based on a theme suggested by a single word. Colours are good incentive words. The colour RED led to a discussion of *red* and *read*, and the difference in meaning.

Red reminded the children of many things, among them: red sky, pillar boxes, traffic lights, fire, poppies.

We decided to base the work on the first three.

Red sky brought forth:

Red sky at night,
Shepherd's delight;
Red in the morning,
Shepherd's warning.

The implications were stated and the lines used as an articulation exercise.

Pillar boxes gave us:

I wrote a letter to my love
And on the way I dropped it,
One of you has picked it up
And put it in your pocket.

Everyone made up a short letter, and half-a-dozen were read. During the reading all the children listened and raised their hands whenever any part was inaudible.

Traffic lights led to counting between the changes:

Red: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.
 Amber: 1, 2.
 Green: 1, 2, 3, 4, 5, 6.
 Amber: 1, 2.

Lesson 6

The association of words has almost endless possibilities. Here are a few brief examples:

Silver: fish, moon, spoons, thimble. The lesson incorporated the poem *Silver*, by Walter de la Mare.

Dogs: greyhounds, collars, leads, fights, cats. The poem used later was *The Little Dog that Had Its Day*, by Rupert Brooke.

Candles: church, night, Christmas-tree, matches.

Here is a report on a lesson planned from colours.

Introduction:

The class was asked for their favourite colours and a selection placed on the black-board.

Development:

The teacher took each word and asked for things it could be used to describe, in order to make clear the associations of the colours. The children gave the *mood* of each colour, thus:

Colour	Favourite for	Description
Blue	9	Quiet
Red	7	Exciting
Green	7	Restful
Yellow	11	The cross colour

Associations of the favourite colour were taken and developed for speech purposes as follows:

Yellow was the chosen colour.

Corn led to horses cutting corn, and rhythmic work on *clip-clop*.

Daffodils gave us trumpets, breezes, bells, bees. From trumpet noises we got trains.

Breezes led to *sh* sounds, and the different types of *sh*, from which we arrived at seas.

Bells gave us *ding-dong* which led to work on nasals. From this we finally arrived at lullabies.

Bees gave *mmmmm*, murmuring, etc.

Flames suggested sounds—crackling, spluttering, etc.

Chinamen, the last association, was not dealt with because of time limit.

READING ALOUD

Reading aloud is a complicated process, hence there should be an easy comfortable atmosphere before the reading begins. Reading aloud can be successful only after the child is able to read fluently and with understanding. Unless there is a reason for supplying books for all to follow, it is better for the rest of the class to receive the reading through their ears rather than follow it in the book. Then the reader has to give the meaning very clearly and there is an active and passive side to the performance.

Faults in reading aloud are often caused by poor eyesight. If spectacles should be worn, they must be put on for a little time before, so that the eyes can focus through them. The reader should face the class and hold the book in such a way that his head is in a good position and the outgoing voice is not impeded by the book. The following phrase is received by the eye whilst the reader is speaking the previous one. Fluency depends upon the good use of this time-lag, as it gives a split second in which the sense can be taken in.

The material to be read should be within the ability of the children. This depends upon the children's intelligence and previous experience in reading.

Tell the children to read slowly. Indistinctness is often caused by rushing through a piece of reading. The first essential is that the listeners should be able to hear, so audibility is the keynote. The second essential is that the attention of those listening

must be arrested and held. The rhythm of the passage has to be established and this is not a difficult matter if pause is used sensibly. There should be a marked pause at the end of a paragraph, quite a long one after a full stop, and a little one after a comma. Sometimes a very important word is stressed by pausing before it. Rhythm is like a big wheel going round. It's like the engine of a ship. You can't see it from outside, but the forward motion and smoothness of the ship depend upon it. The stress should be on important words; the unimportant ones should be there, but not noticed.

For these early age groups the "style" of the reading has to be explained beforehand by the teacher. The children should be told whether it is a story or a description, and whether it is funny or serious.

AGE GROUP SEVEN TO EIGHT

Choose short passages and be sure the material will hold their interest. A paragraph each from *The House at Pooh Corner* is excellent.

Criticise the reading briefly. Such faults as lack of volume can be pointed out by the other children. When the criticism has been made, ask the child to read again the passage which was poor. Correct pronunciation and have the word repeated.

Keep a reading class short in duration.

AGE GROUP EIGHT TO NINE

A good standard in reading aloud should be reached in this age group. Also, an interest will be shown in different "sorts" of reading. An obvious difference is shown by reading a simple ballad telling a clear story, and then reading a prose version of the story.

Lewis Carroll's story of *Sylvie and Bruno*, apart from a few difficult words which can be explained beforehand, affords good practice, for the phrases are short but the sentences are long. A child must be taught to manage phrases, for by the initial attack on each new

sentence, and in a subsidiary way on each new phrase, the interest is held.

In the passage from the story given here, it will be seen that the first sentence has five phrases:

1. The first thing I noticed,
2. as I went lazily along through an open place in the wood,
3. was a large Beetle lying struggling on its back,
4. and I went down upon one knee
5. to help the poor little thing to its feet again.

All these phrases are a whole, for they are within the sentence, but each needs renewed impetus. Teach the children to avoid the monotony of a falling inflection by hearing themselves in their mind speaking the phrase vitally.

SYLVIE AND BRUNO

The first thing I noticed, as I went lazily along through an open place in the wood, was a large Beetle lying struggling on its back, and I went down upon one knee to help the poor little thing to its feet again. In some things, you know, you can't be quite sure what an insect would like: for instance, I could never quite settle, supposing I were a moth, whether I would rather be kept out of the candle, or be allowed to fly straight in and get burnt—or again, supposing I were a spider, I'm not sure if I should be *quite* pleased to have my web torn down, and the fly let loose—but I feel quite certain that, if I were a beetle and had rolled over on my back, I should always be glad to be helped up again.

So, as I was saying, I had gone down upon one knee, and was just reaching out a little stick to turn the Beetle over, when I saw a sight that made me draw back hastily and hold my breath, for fear of making any noise and frightening the little creature away.

Not that she looked as if she would be easily frightened: she seemed so good and gentle that I'm sure she would never expect that any one would wish to hurt her. She was only a few inches high, and was dressed

in green, so that you really would hardly have noticed her among the long grass; and she was so delicate and graceful that she quite seemed to belong to the place, almost as if she were one of the flowers. I may tell you, besides, that she had no wings (I don't believe in Fairies with wings), and that she had quantities of long brown hair and large earnest brown eyes, and then I shall have done all I can to give you an idea of her.

Sylvie (I found out her name afterwards) had knelt down, just as I was doing, to help the Beetle; but it needed more than a little stick for *her* to get it on its legs again; it was as much as she could do, with both arms, to roll the heavy thing over; and all the while she was talking to it, half scolding and half comforting, as a nurse might do with a child that had fallen down.

"There, there! You mustn't cry so much about it. You're not killed yet—though if you were you couldn't cry, you know, and so it's a general rule against crying, my dear! And how did you come to tumble over? But I can see well enough how it was—I needn't ask you that—walking over sand-pits with your chin in the air, as usual. Of course, if you go among sand-pits like that, you must expect to tumble. You should look."

The Beetle murmured something that sounded like "*I did* look," and Sylvie went on again.

"But I know you didn't! You never do! You always walk with your chin up—you're dreadfully conceited. Well, let's see how many legs are broken this time. Why, none of them, I declare! And what's the good of having six legs, my dear, if you can only kick them all about in the air when you tumble? Legs are meant to walk with, you know. Now don't begin putting out your wings yet; I've more to say. Go to the frog that lives behind that buttercup—give him my compliments—Sylvie's compliments—can you say 'compliments'?"

The Beetle tried and, I suppose, succeeded.

"Yes, that's right. And tell him he's to give you some of the salve I left with him yesterday. And you'd better get him to rub

it in for you. He's got rather cold hands, but you mustn't mind that."

I think the Beetle must have shuddered at this idea, for Sylvie went on in a grave tone. "Now you needn't pretend to be so particular as all that, as if you were too grand to be rubbed by a frog. The fact is, you ought to be very much obliged to him. Suppose you could get nobody but a toad to do it, how would you like *that*?"

There was a little pause, and then Sylvie added, "Now you may go. Be a good Beetle, and don't keep your chin in the air." And then began one of those performances of humming, and whizzing, and restless banging about, such as a beetle indulges in when it has decided on flying, but hasn't quite made up its mind which way to go. At last, in one of its awkward zigzags, it managed to fly right into my face, and, by the time I had recovered from the shock, the little Fairy was gone.

Lewis Carroll.

AGE GROUP NINE TO TEN

In the reading suggested as an example for this group (*The Goblin and the Provision-Dealer*), besides the narrative quality of the story, there is a certain degree of characterisation needed by all the people and objects speaking. For example, a tub-like, round hollowness should be given to the voice for the tub's speech:

"Certainly I do," said the tub, "poetry is something they always put at the bottom of newspapers, and which is sometimes cut out."

When a parenthesis occurs, the part in parenthesis must be dropped in pitch and just its tail lifted to the original pitch before the sentence carries on. This must not be exaggerated or made to sound unnatural. Thus:

"Certainly I do,"

b, "poetry is

u

t

said the

something. . . ."

Rate should begin to be varied. Certain parts of the story run more quickly than others.

THE GOBLIN AND THE PROVISION-DEALER

There was a real student; he lived in an attic, and owned nothing at all. There was also a real provision-dealer; he lived in a proper room, and he owned all the house. The little goblin held on to him, for every Christmas Eve he always gave him a bowl of porridge, with a big lump of butter in it. That the provision-dealer could give, and so the goblin lived in the provision-dealer's shop, and it was very comfortable.

One evening the student came in by the back door to buy some candles and cheese. He had no one to send, so he came himself. He got what he wanted, and the provision-dealer and his wife both nodded him a good-evening. And she—she was a woman who could do more than merely nod; she was gifted with a tongue, if you like! The student nodded too, but suddenly stood still, reading the sheet of paper the cheese was wrapped up in. It was a leaf from out of an old book that never ought to have been torn up; an old book that was full of poetry.

"Here's some more of the same kind," said the provision-dealer. "I gave an old woman a few coffee beans for it. If you give me twopence you can have the rest."

"Thanks!" said the student. "Give it me instead of the cheese; I can eat my bread and butter alone! It would be a sin to tear the book up into scraps. You are a fine and practical man, but you know as much about poetry as that tub there."

Now this was very rude, especially to the tub, but the provision-dealer laughed, and the student laughed, for it was only said in fun. But the goblin was angry that anyone should dare to say such a thing to a provision-dealer, who was a householder, and who sold the best butter.

When night was come and the shop shut up, and all were in bed but the student, the

goblin came out, went into the bedroom and took madam's tongue away. She did not want it while she was asleep, and whatever object in the room he put it on, acquired speech and voice, and told its thoughts and feelings just as well as madam. But only one object at a time could use it, which was a blessing; otherwise they would all have been speaking at once.

The goblin put the tongue on the tub, in which lay the old newspapers. "Is it really true," he asked, "that you don't know what poetry is?"

"Certainly I do," said the tub. "Poetry is something they always put at the bottom of newspapers, and which is sometimes cut out. I daresay I have a great deal more of it in me than the student, and yet I am only a simple tub compared with the provision-dealer."

Then the goblin placed the tongue on the coffee-mill. Mercy on us! How it rattled away! And he put it on the butter-cask, and on the till—all were of the same opinion as the waste-paper tub, and what the majority are agreed upon must be respected.

"Now I'll tell the student." And with these words, the goblin stole quietly up the kitchen stairs to the attic, where the student lived. He had a candle burning, and the goblin peeped through the keyhole and saw him reading in the torn book he had got from the shop downstairs.

But how light it was in there! Out of the book shone a bright beam, which grew up into a thick stem, and into a mighty tree, that rose and spread its branches over the student. Every leaf was fresh, and every blossom was a beautiful maiden's head, some with eyes dark and sparkling, others blue and wonderfully clear, every hair was a shining star, and there was a sound of glorious singing.

Such splendour the little goblin had never dreamed of, let alone seen or heard. He remained standing there on tiptoe, peeping and peering till the light in the garret went out. Probably the student had blown it out and gone to bed, but the goblin remained

standing there all the same, for he could still hear the sweet lovely singing—a beautiful lullaby for the student, who had lain down to rest.

“What a wonderful place this is!” said the goblin. “I never expected such a thing. I should like to live with the student.” Then he thought, and thought it over again, but he sighed, “The student has no porridge,” and he went away—yes, he went down again to the provision-dealer’s. And it was a good thing too that he did come back, for the tub had almost worn out madam’s tongue. It had already spoken out at one side all that was contained in it, and was just about to turn round to give it out from the other side too, when the goblin came and took the tongue back to madam. But from that time forth, the whole shop from the till down to the firewood, took its views from the tub; and all paid it so much respect, and had such confidence in it that when the provision-dealer read the cut and dramatic criticism in the newspaper of an evening, they all believed it came from the tub.

But the little goblin no longer sat quietly listening to the whispers and wit to be heard down there. No, as soon as the light began to glimmer out of the garret, he felt as if the rays were strong cables, drawing him up, and he was obliged to go up and peep through the keyhole. Then a feeling of greatness came over him, such as we feel beside the rolling sea when the storm sweeps over it, and he burst into tears. He did not know himself why he wept, but a strange and very pleasant feeling was mingled with his tears. How wonderfully glorious it must be to sit with the student under that tree! But that could not be—he must content himself with the keyhole, and be glad of that. There he stood on the cold landing with the autumn wind blowing down from the trapdoor in the loft. It was cold, so cold, but that the little fellow only felt when the light in the attic was put out, and the music in the wonderful tree had died away. Ugh! Then he felt frozen, and he crept down to his warm corner again—it was cosy and comfortable there!

And when Christmas came, and with it the porridge, and the great lump of butter—why, then the provision-dealer was the master for him.

But in the middle of the night the goblin was awakened by a terrible noise and a banging at the shutters, against which the people were knocking as hard as they could. The night watchman blew his horn, for a great fire had broken out. Was it in the house itself, or at the neighbour’s? Where was it? It was a terrible moment.

The provision-dealer’s wife was so bewildered that she took her gold ear-rings from her ears, and put them into her pocket, so that she might save at least something; the provision-dealer made a dash for his bank-notes; and the maid for the silk shawl which she had managed to afford. Everyone wanted to save the best they had; the goblin wanted to do that too, and in a few leaps he was up the stairs and in the room of the student, who was calmly standing at the open window, gazing at the fire that raged in the house of the neighbour opposite. The little goblin seized the book from the table, put it into his red cap, and clasped it with both hands; the greatest treasure in the house was saved, and then he ran up and away, out upon the roof of the house, on to the chimney. There he sat, in the light of the flames from the burning house opposite, both hands pressed over his red cap which held his treasure, and now he knew where his heart was, and to whom he really belonged. But when the fire was extinguished, and the goblin again began to reflect calmly, “Well, I will divide myself between the two,” he said, “I cannot give up the provision-dealer altogether because of the porridge!”

Hans Andersen.

AGE GROUP TEN TO ELEVEN

Good reading should sound natural and enjoyable, and make the hearer wish to go on listening. The variation of volume and rate, within limits, and the free movement of the voice around its “middle” note, all help

to make it interesting. The less the child is made aware consciously of these things, the better, but the teacher should bear them in mind and, if the speech-training lessons are successful, reading aloud will have clarity and audibility; the voice will not hug one or two notes, but will be expressive and easy.

Suggestions that, "That bit might be a little quicker," or that, "That is a roaring bit, so make us enjoy your roar," are sufficient. There should be no conscious mechanical differences made, but variation should be through understanding of the passage.

This passage from *Through the Looking Glass* gives many changes, especially in rate. The urging of the Queen to go "Faster! Faster!" puts the same urgency into the reader, but never allow a child to read at a rate at which clearness is sacrificed.

An appreciation of the differences in prose can be made by giving passages on the same subject, but written in widely differing styles. Do not ask for more than obvious differences to be realised at this age.

"FASTER! FASTER!"

Alice never could quite make out, in thinking it over afterwards, how it was that they began: all she remembers is that they were running hand in hand, and the Queen went so fast that it was all she could do to keep up with her: and still the Queen kept crying "Faster! Faster!" but Alice felt she *could not* go faster, though she had no breath left to say so.

The most curious part of the thing was that the trees and the other things round them never changed their places at all: however fast they went, they never seemed to pass anything. "I wonder if all the things

move along with us?" thought poor puzzled Alice. And the Queen seemed to guess her thoughts, for she cried "Faster! Don't try to talk!"

Not that Alice had any idea of doing *that*. She felt as if she would never be able to talk again, she was getting so out of breath: and still the Queen cried "Faster! Faster!" and dragged her along. "Are we nearly there?" Alice managed to pant out at last.

"Nearly there!" the Queen repeated. "Why, we passed it ten minutes ago! Faster!" And they ran on for a time in silence, with the wind whistling in Alice's ears, and almost blowing her hair off her head, she fancied.

"Now! Now!" cried the Queen. "Faster! Faster!" And they went so fast that at last they seemed to skim through the air, hardly touching the ground with their feet, till suddenly, just as Alice was getting quite exhausted, they stopped, and she found herself sitting on the ground breathless and giddy.

The Queen propped her up against a tree, and said kindly, "You may rest a little now."

Alice looked round her in great surprise. "Why, I do believe we've been under this tree the whole time! Everything's just as it was!"

"Of course it is," said the Queen: "what would you have it?"

"Well, in *our* country," said Alice, still panting a little, "you'd generally get to somewhere else—if you ran very fast for a long time, as we've been doing."

"A slow sort of country!" said the Queen. "Now, *here*, you see, it takes all the running *you* can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"

Lewis Carroll.

SPEAK PLAIN AND TO THE PURPOSE

SECTION TWO—VERSE-SPEAKING

THE LION & THE UNICORN

Were fighting for the Crown:

The Lion beat the Unicorn
All round the Town.

Some gave them white bread
Some gave them brown,
Some gave them plum cake
And drummed them out of Town.

This poem is taken from the book "Alice in Wonderland" by Lewis Carroll.

VERSE-SPEAKING

INTRODUCTION

A SIMPLE way of encouraging children to contribute to the choice of the poetry to be spoken is to centre the work round a main theme. The rhyme of *The Lion and the Unicorn* has been selected here and the verse chosen for the first three age groups is a free and easy development of it. The association is often loose and there has been no hesitation in meandering down attractive by-lanes. The poems for age group ten to eleven, on the other hand, have been chosen simply because they happen to be suitable for that age.

In teaching verse-speaking the difficulty of large numbers in a group is a serious one. Little can be done in the way of individual work. Group-speaking perforce takes its place. Sometimes this reaches the standard at which it can be termed "choral verse-speaking." It will be referred to by that name in these lessons.

Another difficulty is that of choosing verse for an age group when one has no knowledge of the specific group by which it will be used. The teacher will have to use her discretion and decide whether the intelligence and previous experience of the children make them in advance or in arrears of the material. On the whole these lessons are on the advanced side.

AGE GROUP SEVEN TO EIGHT

Lesson 1

Let us look at this rhyme:

THE LION AND THE UNICORN

The Lion and the Unicorn
Were fighting for the crown:

The Lion beat the Unicorn
All round the town.
Some gave them white bread,
Some gave them brown,
Some gave them plum cake
And drummed them out of town.

Let the children speak the rhyme together and then question them on the possible meanings of it. An illustration of the coat-of-arms would stimulate ideas. Since the rhyme speaks of the *crown*, the *town* is probably London. Does anyone know any rhymes about London? Possible suggestions will be: *London's Burning*, *Oranges and Lemons*, and *London Bridge is Falling Down*.

Take one rhyme and give it special attention:

London Bridge is falling down,
Falling down, falling down,
London Bridge is falling down,
My fair lady.



Lesson 2

Base this lesson on the following old rhyme. Supply a copy for every child and be prepared to help those whose reading is weak.



(See page 238.)

ORANGES AND LEMONS

Gay go up, and gay go down,
To ring the bells of London Town.

Bull's eyes and targets,
Say the bells of St. Marg'ret's.

Brickbats and tiles,
Say the bells of St. Giles'.

Halfpence and farthings,
Say the bells of St. Martin's.

Oranges and lemons,
Say the bells of St. Clement's.

Pancakes and fritters,
Say the bells of St. Peter's.

Two sticks and an apple,
Say the bells at Whitechapel.

Old Father Baldpate,
Say the slow bells at Aldgate.

You owe me ten shillings,
Say the bells at St. Helen's.

Pokers and tongs,
Say the bells at St. John's.

Kettles and pans,
Say the bells at St. Ann's.

When will you pay me?
Say the bells at Old Bailey.

When I grow rich,
Say the bells at Shoreditch.

Pray when will that be?
Say the bells at Stepney.

I am sure I don't know,
Says the great bell at Bow.

Here comes a candle to light you to bed,
And here comes a chopper to chop off your
head.

Old Rhyme.

As the poem is spoken, be careful that the rhythm is kept but that the metre is not followed slavishly. The stress should fall on the important words. Also remember that just because it is verse it must not sound unnatural. Thus:

Gay go up, and gay go down,
To ring the bells of London Town,

has strong stresses on *up*, *down*, *ring* and the first syllable of *London*. There is a secondary stress on the words *gay* (both), *bells*, and *town*. The words *go*, *and*, *to*, *the*, and *of* should be clearly articulated but inconspicuous. Also, these words are not always pronounced in quite the same way as they are in isolation. So it runs:

Gay go up, ernd gay go down,
Ter ring the bells erv London Town.

There is a swing of the bell-rope in the first line of each couplet, and it runs:

Gay go uuuuup, and gay go doooooown.

In the second line the bells ring four times:

To ring the bells of London Town.
ding dong ding dong

Certain phrases will be difficult to say, so they should be spoken very slowly and in a whisper. When they have been perfected in that way, increase the rate and volume to normal.

The important point is that the poem should have the bells running through it and that it should be fun to speak.

Lesson 3

Speak the last lesson's poem again, but this time consider its rhyme. *Down* rhymes with *town*, because there is the same consonant at the end and the two words have the same vowel sound. Think of other words that rhyme with these: *brown*, *frown*, *crown*, *gown*. Rhymes at the ends of lines are like tiny bright stones set in them. When two lines rhyme it is as though they are set with the same kind of stone. Thus in a stanza there

is a pattern of different stones. In this poem they go in pairs:

2 rubies
2 diamonds
2 emeralds
and so on.

In *London Bridge* the rhyme is alternate, so there is:

diamond
ruby
diamond
ruby.

Some poems have many lines and wonderful patterns are made, for example:

ruby
pearl
ruby
pearl
diamond
sapphire
diamond
sapphire
emerald
moonstone
topaz
emerald
moonstone
topaz.

When two lines rhyme, the rhyme must be marked so that the hearer easily realises the likeness of the words in sound.

When the children can speak the poem together satisfactorily, let the first and last couplets be spoken by all, but the others as solos or in small groups of three or four voices.

Lesson 4

In the last lesson rhymes were likened to jewels and in the following poem street lanterns are called "jewels of the dark." Again the poem rhymes in couplets and tells about a sight often seen in London—men digging up roads and then leaving them at night.

STREET LANTERNS

Country roads are yellow and brown.
We mend the roads in London Town.

Never a hansom dare come nigh,
Never a cart goes rolling by.

An unwonted silence steals
In between the turning wheels.

Quickly ends the autumn day,
And the workman goes his way,

Leaving, midst the traffic rude,
One small isle of solitude,

Lit, throughout the lengthy night,
By the lantern's little light.

Jewels of the dark have we,
Brighter than the rustic's be.

Over the dull earth are thrown
Topaz and the ruby stone.

Mary E. Coleridge.

When the poem has been read through, ask whether anyone knows what a *hansom* is; the words *unwonted*, *traffic rude*, *solitude* and *rustics*, will also need explanation. If the children find a poem difficult, it is useful for the teacher to read it, but it is better to get the activity from the children without example. Help with the first stanza is, however, usually necessary.

There is a variation of volume in this poem, and the onomatopoeic words give a chance of creating oral pictures—*never a cart goes rolling by*. The noise of the traffic and the busy street give way to stillness. The third couplet needs a reposeful silence and the speakers are helped by the words *silence* and *steals*.

Lesson 5

In London there is a famous street named Oxford Street. It was given that name because it is the road leading to Oxford. All towns have roads leading out of them into the country. For a change let us follow one of those roads and visit the country. In London the roads are bright at night with street lanterns, and in the country the campion is sometimes called the lamp flower.

THE LAMP FLOWER

The campion white
Above the grass
Her lamps doth light
Where fairies pass.

Softly they show
The secret way,
Unflickering glow
For elf and fay.

My little thought
Hath donned her shoe,
And all untaught
Gone dancing too.

Sadly I peer
Among the grass
And seem to hear
The fairies pass,

But where they go
I cannot see,
Too faintly glow
The lamps for me.

My thought is gone
With fay and elf,
We mope alone,
I and myself.

Margaret Cecilia Furse.

In this poem the lines rhyme alternately, but sometimes it is rather difficult, because the lines get friendly and take away the fence that divides the gardens. When this happens and there is no fence (or comma) at the end of a line, you must remember that although you can run freely from one to another, it is still a different garden and that you must pause just long enough to register it.

The rhymes still go diamond, ruby, diamond, ruby.

As the poem is about a delicate, dainty flower, it must be spoken lightly. In the third stanza there is a dancing feeling all through it; in stanza four the poem becomes rather sad.

Lesson 6

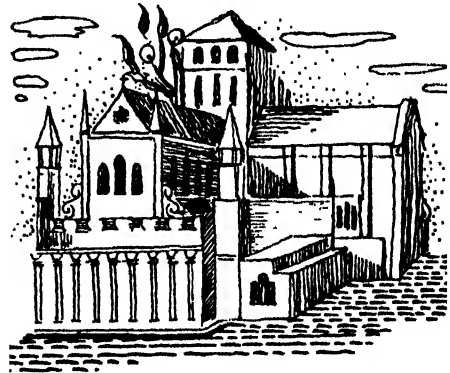
By now there has been plenty of time for the children to find a few poems about London. Let us look at this old rhyme:

ST. PAUL'S

Upon Paul's steeple stands a tree,
As full of apples as may be.

The little boys of London Town,
They run with hooks and pull them down.

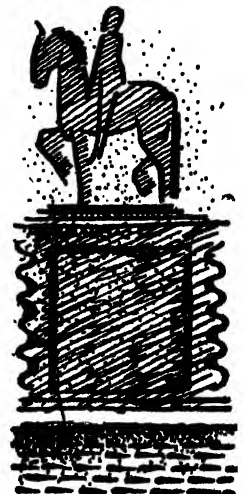
And then they run from hedge to hedge,
Until they come to London Bridge.



Concentrate on clearness in this rhyme, and make sure that every word is distinct, but stressed in its right proportion.

Here is another little rhyme about London:

As I was going by
Charing Cross,
I saw a black man
upon a black
horse;
They told me it was
King Charles the
First,
Oh dear! My heart
was ready to
burst!



Lastly, let us speak a poem about London Bridge:

LONDON BRIDGE IS BROKEN DOWN

London Bridge is broken down,
Dance over my Ladye Lea,
London Bridge is broken down,
With a gay Ladye.

Build it up with iron and steel,
Dance over my Ladye Lea,
Build it up with iron and steel,
With a gay Ladye.

Iron and steel will bend and break,
Dance over my Ladye Lea,
Iron and steel will bend and break,
With a gay Ladye.

Build it up with wood and clay,
Dance over my Ladye Lea,
Build it up with wood and clay,
With a gay Ladye.

Wood and clay will wash away,
Dance over my Ladye Lea,
Wood and clay will wash away,
With a gay Ladye.

Build it up with silver and gold,
Dance over my Ladye Lea,
Build it up with silver and gold,
With a gay Ladye.

Silver and gold will be stolen away,
Dance over my Ladye Lea,
Silver and gold will be stolen away,
With a gay Ladye.

Build it up with stone so strong,
Dance over my Ladye Lea,
Build it up with stone so strong,
With a gay Ladye.

Now it will last for ages long,
Dance over my Ladye Lea,
Now it will last for ages long,
With a gay Ladye.

Old Rhyme.



This poem has a chorus. Many poems have choruses. They are the parts in which everyone can join. The rest can be spoken as solos.

The chorus lines are:

*Dance over my Ladye Lea,
and
With a gay Ladye.*

Now let us try quite a difficult cumulative poem:

THE KEY OF THE KINGDOM

This is the Key of the Kingdom:
In that kingdom is a city;
In that city is a town;
In that town there is a street;
In that street there winds a lane;

In that lane there is a yard;
In that yard there is a house;
In that house there waits a room;
In that room an empty bed;
And on that bed a basket—
A Basket of Sweet Flowers:
Of Flowers, of Flowers;
A Basket of Sweet Flowers.

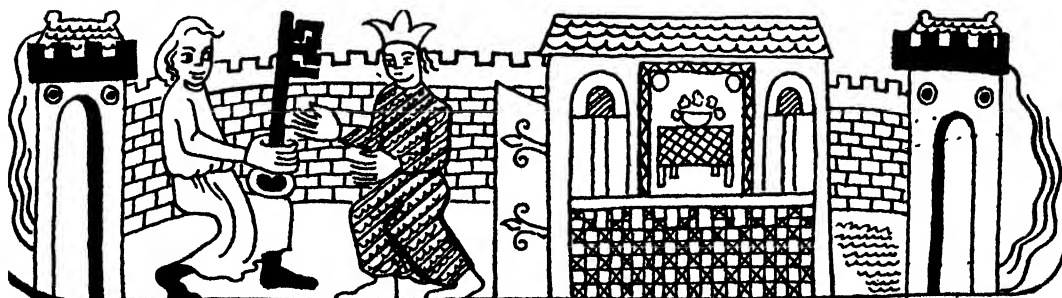
Flowers in a Basket;
Basket on the bed;
Bed in the chamber;
Chamber in the house;
House in the weedy lane;
Yard in the winding lane;
Lane in the broad street;
Street in the high town;
Town in the city;
City in the Kingdom—
This is the Key of the Kingdom.
Of the Kingdom, this is the Key.

rhyme to begin the lesson and get everyone warmed up:

THE KING OF FRANCE

The King of France went up the hill
With twenty thousand men;
The King of France came down the hill,
And ne'er went up again.

When the children are speaking together, besides getting them together rhythmically, try to get syllabic unification. In these early stages, however, don't worry too much about the technical side of the performance. Concentrate on enjoying the poetry and its spontaneous interpretation by the children. Whilst phrases and words have to be explained and the everyday idea of the poem discussed, do not dig deeper into what the poem means to the children. By your



There are several ways of arranging this poem for speaking, so ask the children for ideas. An obvious way is to bring in a new voice on each line from the first to the end of the first stanza. Then all begin the second stanza and take out one voice per line until only one is left on—

This is the Key of the Kingdom.

Then all together on the last line—

Of the Kingdom this is the Key.

AGE GROUP EIGHT TO NINE

A new twist in the theme brings the subjects to kings and queens. Use this little

presentation give the chance of real imaginative expression—and leave it at that. Conscious searching is to be condemned. On the other hand, good speech habits should be learnt during this work and vital lessons can be slipped in.

Go on to this nonsense poem:

KING'S CROSS

King's Cross!
What shall we do?
His purple robe
Is rent in two!
Out of his Crown
He's torn the gems!

He's thrown his sceptre
 Into the Thames!
 The Court is shaking
 In its shoe—
 King's Cross
What shall we do?
Leave him alone
For a minute or two.

Eleanor Farjeon.



This can be divided into work for several groups.

Lines 1 and 2 1st group
 „ 3 and 4 2nd group
 „ 5 and 6 3rd group
 „ 7 and 8 4th group
 „ 9 and 10 5th group

All speak lines 11 and 12.

A strong solo voice speaks lines 13 and 14.

Lesson 2

Draw on the blackboard a diagram showing the approximate situation of the places mentioned in the following poem. Then have the poem read.

KINGSLAND

What's Kingsland?
 What's Kingsland?
 Here, where I stand
 That's Kingsland!

With Islington to the west of me,
 Canonbury abreast of me,
 With Hackney to the East of me,
 And Dalston not the least of me,
 With Stamford to the North of me,
 And Stoke gone forth of me,
 With Shoreditch to the South of me,
 THAT'S Kingsland,
 Here where I stand,
 And none shall win a hand
 Of all the King's Land.

Eleanor Farjeon.

Place the spot on the map where the speaker should be standing. Aim at smooth easy speaking in this and then have four or five solo attempts at it.

Lesson 3

Before beginning work on the poem *King John*, tell the story of Magna Carta (see page 306) so that the circumstances of the poem are understood.

There is a danger of the speaking being "metrical" in this poem. The rhythm is irregular and the urges in the line should be established. Some have two urges; some four. The names of the barons also offer obstacles, so make a list of them and practise saying them. Each baron should have a clear personality and all the children can characterise one. Choose the most successful for the solo lines. The direct speech should be characterised.

KING JOHN

John was a tyrant,
 John was a tartar,
 But John put his name to the Great Big
 Charter.

Every Baron,
 From Thames to Tweed,
 Followed the road
 To Runnymede.

Every Baron had something to say
 To poor perplexed King John that day.
 "Pray sign your name," said Guy de Gaunt;



"It's easily done, and it's all we want."
 "A J and an O and an H and an N,"
 Said Hugo, Baron of Harpenden.
 Quietly spoke the Lord Rambure:
 "Oblige, Lord King, with your signature."
 "Your name, my liege, to be writ just here,
 A mere formality," laughed de Bere.
 "A stroke of the pen and the thing is done,"
 Murmured Sir Roger of Trumpington.
 "Done in a twinkling," sniffed de Guise.
 Said Stephen Langton: "Sign, if you please!"
 So many people
 Egging him on,
 I can't help feeling
 Sorry for John.

Hugh Chesterman.

Lesson 4

Let's go far afield this week and look at
 the following amusing poem:

THE AKOND OF SWAT

Who, or why, or which, or what is the Akond
 of Swat?

Is he tall or short, or dark or fair?
 Does he sit on a stool or a sofa or chair, or
 SQUAT,
 The Akond of Swat?

Is he wise or foolish, young or old?
 Does he drink his soup and his coffee cold, or
 HOT,
 The Akond of Swat?

Does he sing or whistle, jabber or talk?
 And when riding abroad does he gallop or
 walk, or TROT,
 The Akond of Swat?

Does he wear a turban, a fez, or a hat?
 Does he sleep on a mattress, a bed, or a mat,
 or a COT,
 The Akond of Swat?

When he writes a copy in round-hand size,
 Does he cross his T's and finish his I's, or
 NOT,
 The Akond of Swat?

Can he write a letter concisely clear
 Without a speck or a smudge or smear, or
 BLOT,
 The Akond of Swat?

Do his people like him extremely well?
 Or do they, whenever they can, rebel, or
 PLOT,
 At the Akond of SWAT?

Anon.

This is only part of a very long poem.
 The rhyming is odd. The first line of each
 stanza stands on its own and doesn't rhyme
 with anything. The second line of each
 stanza always rhymes with *Swat*. The third
 line is always *The Akond of Swat*. Now
 consider the rhythm; the first line of a
 stanza has four urges, the second line five,
 and the third line always two. This is an
 unusual arrangement.

All the children can speak the first line. Then small groups can pick up the different stanzas.

In group work the same groups can be kept, so that those in them become used to speaking together. Usually they will work enthusiastically, and when the same poem is practised for three or four weeks a notable improvement takes place.

Lesson 5

The action and colour in *The King of China's Daughter* appeals strongly to young children. If the poem is too difficult for any particular group, the following rhyme can be substituted:



I had a little nut-tree
And nothing would it bear,
But a silver nutmeg
And a golden pear.
I danced over water,
I skipped over sea,
And all the birds of the air
Couldn't catch me.

Read the following poem through all together:

THE KING OF CHINA'S DAUGHTER

The King of China's daughter,
She never would love me,

Though I hung my cap and bells upon
Her nutmeg tree.

For oranges and lemons,
The stars in bright blue air
(I stole them long ago, my dear),
Were dangling there.
The Moon did give me silver pence,
The Sun did give me gold,
And both together softly blew
To make my porridge cold;
But the King of China's daughter
Pretended not to see
When I hung my cap and bells upon
Her nutmeg tree.

The King of China's daughter,
So beautiful to see,
With her face like yellow water, left
Her nutmeg tree.
Her little rope for skipping
She kissed and gave it me—
Made of painted notes of singing-birds
Among the fields of tea.
I skipped across the nutmeg grove,—
I skipped across the sea:
But neither sun nor moon, my dear,
Has yet caught me.

Edith Sitwell.

Make a list of all the colours in the poem

orange
lemon
stars
blue air
moon
silver pence
sun
gold
yellow water
painted notes.

Then make a list of all the actions:

hanging the cap and bells upon the tree
stealing the stars
sun and moon blowing
skipping rope
skipping across the nutmeg grove and ther
across the sea
sun and moon not catching him.

These two things, the colour and the movement, give a vivid atmosphere to the poem. It is very gay and has a dancing, skipping quality all through it. When the children speak it, remember that this quality must be brought out. It should be spoken fairly quickly with no dragging.

Lesson 6

This time the poem tells a story. When a poem tells a story, the important thing to do is to make those listening really interested and eager to hear what comes next. Story poems must keep to their "form," as must all poetry. The "form" is the way in which the poet has arranged the poem. "Form" includes the number of lines in a stanza, the rhythm of a line, the metre of the line and the rhyming scheme. When speaking the poem it is also important to make the caesura pause, which is somewhere within the line, usually in the middle. All this is information for the teacher only, but whilst the children at this stage need not bother with such things, except in an elementary way, the "form" should be kept by positive suggestion from the teacher.

The complete poem is given here, but it will be sufficient for the children at this stage to tackle only the first and last sections. The middle section, however, is very beautiful, and the children will delight in hearing it spoken by the teacher at the appropriate time of the telling of the story.

The meaning of the first and last sections can be brought out fully in the speaking by questioning the children and letting them give the answers. For example:

Who is the poem about? (John of Grafton.)
 What was he doing? (Dreaming.)
 How long did he travel? (Seven days.)
 Where did he travel? (Down the roads of England.)
 Where did he live? (In Warwickshire.)
 Where did he go? (To London.)
 What did he look like? (He was grey and very wrinkled.)

Why did he go to London? (To see a king put on his crown.)

THE CROWNING OF DREAMING JOHN

I

Seven days he travelled
 Down the roads of England,
 Out of leafy Warwick lanes
 Into London Town.
 Grey and very wrinkled
 Was Dreaming John of Grafton,
 But seven days he walked to see
 A king put on his crown.

Down the streets of London
 He asked the crowded people
 Where would be the crowning
 And when would it begin.
 He said he'd got a shilling,
 A shining silver shilling,
 But when he came to Westminster
 They wouldn't let him in.

Dreaming John of Grafton
 Looked upon the people,
 Laughed a little laugh, and then
 Whistled and was gone.
 Out along the long roads,
 The twisting roads of England,
 Back into the Warwick lanes
 Wandered Dreaming John.

II

As twilight touched with her ghostly fingers
 All the meadows and mellow hills,
 And the great sun swept in his robes of glory—
 Woven of petals of daffodils
 And jewelled and fringed with leaves of the
 roses—
 Down the plains of the western way,
 Among the rows of the scented clover
 Dreaming John in his dreaming lay.

Since dawn had folded the stars of heaven
 He'd counted a score of miles and five,
 And now, with a vagabond heart untroubled
 And proud as the properest man alive,
 He sat him down with a limber spirit

That all men covet and few may keep,
And he watched the summer draw round her
beauty
The shadow that shepherds the world to sleep.

And up from the valleys and shining rivers,
And out of the shadowy wood-ways wild,
And down from the secret hills, and streaming
Out of the shimmering undefiled
Wonder of sky that arched him over,
Came a company shod in gold
And girt in gowns of a thousand blossoms,
Laughing and rainbow-aureoled.

Wrinkled and grey and with eyes a-wonder
And soul beatified, Dreaming John
Watched the marvellous company gather
While over the clover a glory shone;
They bore on their brows the hues of heaven,
Their limbs were sweet with flowers of the
fields,

And their feet were bright with the gleaming
treasure

That prodigal earth to her children yields.

They stood before him, and John was laugh-
ing

As they were laughing; he knew them all,
Spirits of trees and pools and meadows,
Mountain and windy waterfall,
Spirits of clouds and skies and rivers,
Leaves and shadows and rain and sun,
A crowded, jostling, laughing army,
And Dreaming John knew every one.

Among them then was a sound of singing
And chiming music, as one came down

The level rows of the scented clover,
Bearing aloft a flashing crown;
No word of a man's desert was spoken,
Nor any word of a man's unworth,
But there on the wrinkled brow it rested,
And Dreaming John was king of the earth.



III

Dreaming John of Grafton
Went away to London,
Saw the coloured banners fly,
Heard the great bells ring,
But though his tongue was civil
And he had a silver shilling,
They wouldn't let him in to see
The crowning of the King.

So back along the long roads,
The leafy roads of England,
Dreaming John went carolling,
Travelling alone,
And in a summer evening,
Among the scented clover,
He held before a shouting throng
A crowning of his own.

John Drinkwater.



Here are two more poems that will be useful in this section.

TARTARY

If I were Lord of Tartary,
Myself and me alone,
My bed should be of ivory,
Of beaten gold my throne;
And in my court should peacocks flaunt,
And in my forests tigers haunt,
And in my pools great fishes slant
Their fins athwart the sun.

If I were Lord of Tartary,
Trumpeters every day
To every meal should summon me,
And in my courtyard bray;
And in the evening lamps would shine,
Yellow as honey, red as wine,
While harp, and flute, and mandoline,
Made music sweet and gay.

If I were Lord of Tartary,
I'd wear a robe of beads,
White, and gold, and green they'd
be—
And clustered thick as seeds:
And ere should wane the morning
star,
I'd don my robe and scimitar,
And zebras seven should draw my
car
Through Tartary's dark glades.

Lord of the fruits of Tartary,
Her rivers silver-pale!
Lord of the hills of Tartary,
Glen, thicket, wood, and dale
Her flashing stars, her scented
breeze,
Her trembling lakes, like foamless seas,
Her bird-delighting citron-trees
In every purple vale!

Walter de la Mare.

THE FIDDLERS

Nine feat fiddlers had good Queen Bess
To play her music as she did dress.

Behind an arras of horse and hound
They sate there scraping delightful
sound.

Spangled, bejewelled, her skirts would she
Draw o'er a petticoat of cramasie;
And soft each string like a bird would sing
In the starry dusk of evening.
Then slow from the deeps the crisscross
bows

Crooning like doves, arose and arose,
Till when, like a cage, her ladies did raise
A stiff rich splendour o'er her ribbed stays,
Like bumbling bees those four times nine
Fingers in melodies loud did pine;
Till came her coif and her violet shoon,
And her virgin face shone out like the moon:
Oh, then in a rapture those three times three
Fiddlers squealed shrill on their topmost C.

Walter de la Mare.



AGE GROUP NINE TO TEN

From now onwards the question of form of poetry and the way in which it is spoken will only be mentioned when there is a special point to stress. Nevertheless the teacher must bear these two points in mind always. This group of lessons will be mainly centred round individual poets and the subjects they chose for poems.

The question will arise as to whether children should be asked to learn poems by heart. The answer is that a simple poem will be almost known after it has been run through several times, provided the meaning is grasped and the rhythm is securely established. Learning "parrot fashion" is of little value, but a difficult poem needs conscious effort. Learning can be done in three ways: by seeing it on the printed page and then seeing it in the mind's eye; by hearing it and taking it in through the ears; by repeating it so that the speech organs get into the habit of saying the words and phrases. Attempt to learn a poem as a whole and not in bits, and work at it for short periods with long intervals between.

Extra poems of varying difficulty have been added after some of the lessons, so that the theme can be followed for more than one or two lessons if desired. Titles of a large number of suitable poems will be found in the Index at the end of this volume.

Lesson 1

Working again from the theme of *The Lion and the Unicorn*, let us consider where we could go if we were "drummed out of town." Which road would you take if you could choose? Let us think about roads.

Here is a poem by Dr. John Masefield, the Poet Laureate. Many of his poems have a taste of adventure in them. His sea poems are especially exciting.

ROADWAYS

One road leads to London,
One road runs to Wales,
My road leads me seawards
To the white dipping sails.

One road leads to the river,
As it goes singing slow;
My road leads to shipping,
Where the bronzed sailors go.

Leads me, lures me, calls me
To salt green tossing sea;

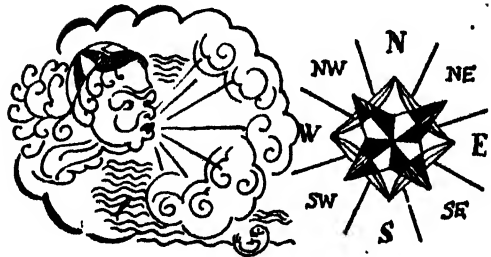
A road without earth's road-dust
Is the right road for me.

A wet road heaving, shining,
And wild with seagulls' cries,
A mad salt sea-wind blowing
The salt spray in my eyes.

My road calls me, lures me
West, east, south, and north;
Most roads lead men homewards,
My road leads me forth.

To add more miles to the tally
Of grey miles left behind,
In quest of that one beauty
God put me here to find.

John Masefield.



The sound of the sea runs through the poem. In some stanzas it is suggested by a longing for the sea. The line *West, east, south, and north*, suggests a compass. Here is a drawing of one and also a head suggesting wind such as can be seen on old maps. Some maps have little ships drawn on them. Speak the poem again, remembering it was written by a poet who had been to sea for a long time and who loved all the wonderful things the sea and strange places could offer.

We will finish the lesson by reading another poem by Dr. Masefield.

TRADE WINDS

In the harbour, in the island, in the Spanish
Seas,
Are the tiny white houses and the orange-
trees,

And day-long, night-long, the cool and
pleasant breeze
Of the steady Trade Winds blowing.

There is the red wine, the nutty Spanish ale,
The shuffle of the dancers, the old salt's tale,
The squeaking fiddle, and the souging in the
sail

Of the steady Trade Winds blowing.

And o' nights there's fire-flies and the yellow
moon,

And in the ghostly palm-trees the sleepy tune
Of the quiet voice calling me, the long low
croon

Of the steady Trade Winds blowing.

John Masefield.

Lesson 2

Next we will turn to another of Dr.
Masefield's poems about roads.

TEWKESBURY ROAD

It is good to be out on the road, and going
one knows not where,

Going through meadow and village, one
knows not whither nor why;

Through the grey light drift of the dust, in
the keen cool rush of the air,

Under the flying white clouds, and the
broad blue lift of the sky;

And to halt at the chattering brook, in the
tall green fern at the brink

Where the harebell grows, and the gorse,
and the fox-gloves purple and white;

Where the shy-eyed delicate deer troop down
to the pools to drink,

When the stars are mellow and large at the
coming on of the night.

O! to feel the warmth of the rain, and the
homely smell of the earth,

Is a tune for the blood to jig to, a joy past
power of words;

And the blessed green comely meadows seem
all a-ripple with mirth

At the lilt of the shifting feet, and the dear
wild cry of the birds.

John Masefield.

Do you notice the long lines with six
rhythmic urges in each giving a sense of
travelling and tramping along the road?

Let us look up Tewkesbury on the map.
It is in Gloucestershire, one of the loveliest
counties in England. Tewkesbury is about
half-way between Gloucester and Worcester.
The river Severn flows through that part of
the country. (Some photographs of the
country round this part would be interesting.)
What can you learn about the kind of country
from the poem? Also what flowers grow?
When the atmosphere of the countryside
has been created, go back to speaking the
poem and get the experience of walking
through it.

Lesson 3

John Drinkwater has written a poem about
taking roads in the part of the country we
talked of last time. This time the country
is Worcestershire. Say "Mamble," and guess
what kind of place it would be. Lazy? That
is what Mr. Drinkwater thought. Here is the
poem:

MAMBLE

I never went to Mamble
That lies above the Teme,
So I wonder who's in Mamble,
And whether people seem
Who breed and brew along there
As lazy as the name,
And whether any song there
Sets alehouse wits aflame.

The finger-post says Mamble,
And that is all I know
Of the narrow road to Mamble,
And should I turn and go
To that place of lazy token
That lies above the Teme,
There might be a Mamble broken
That was lissom in a dream.

So leave the road to Mamble
And take another road
To as good a place as Mamble
Be it lazy as a toad;
Who travels Worcester county
Takes any place that comes
When April tosses bounty
To the cherries and the plums.

John Drinkwater.

The poem has a lazy feeling and it must be spoken in an easy, sleepy, smooth way. It must be clear, too, or the listeners will not hear it.

Some of the words need explaining. What does the phrase *Breed and brew along there* mean? What is a *place of lazy token*? What does *lissom in a dream* mean? What does *lazy as a toad* mean? What does it mean when it says that *April tosses bounty to the cherries and the plums*?

Lesson 4

Here is another poem which is sleepy and lay like the last one:

NIGHT OF SPRING

Slow, horses, slow,
As thro' the wood we go—
We would count the stars in heaven,
Hear the grasses grow;

Watch the cloudlets few
Dappling the deep blue,
In our open palms outspread
Catch the blessed dew.

We would hear the breeze
Ruffling the dim trees,
Hear its sweet love-ditty set
To endless harmonies.

Slow, horses, slow,
As thro' the wood we go—
All the beauty of the night
We would learn and know!

Thomas Westwood.

The first two lines and the last verse may be spoken altogether. The rest of the poem may be divided among groups.

Lesson 5

So far the poems in this group have been serious, so we will have a nonsense one next. We have had poems about the sea, and here is one about sailors:

LITTLE BILLEE

There were three sailors of Bristol city
Who took a boat and went to sea,
But first with beef and captain's biscuits
And pickled pork, they loaded she.

There was gorging Jack and guzzling Jimmy,
And the youngest, he was little Billee.
Now when they got as far as the Equator,
They'd nothing left but one split pea.

Says gorging Jack to guzzling Jimmy,
"I'm extremely hungaree,"
To gorging Jack says guzzling Jimmy,
"We've nothing left, us must eat we."

Says gorging Jack to guzzling Jimmy,
"With one another we shouldn't agree!
There's little Bill, he's young and tender,
We're old and tough, so let's eat he."

"O! Billy, we're going to kill and eat you,
So undo the button of your chemie."
When Bill received this information
He used his pocket handkerchie.

"First let me say my catechism,
Which my poor Mammy taught to me."
"Make haste, make haste," says guzzling
Jimmy,
While Jack pulled out his snickersnee.

So Billie went up to the main-top gallant
mast,
And down he fell on his bended knee,
He scarce had got to the twelfth command-
ment,
When up he jumps, "There's land I see."

"Jerusalem and Madagascar,
And North and South Americée,
There's a British flag, a-riding at anchor,
With Admiral Napier, K.C.B."

So when they got aboard the Admiral's,
He hanged fat Jack and flogged Jimmee;
But as for little Bill, he made him
The Captain of a Seventy-three!

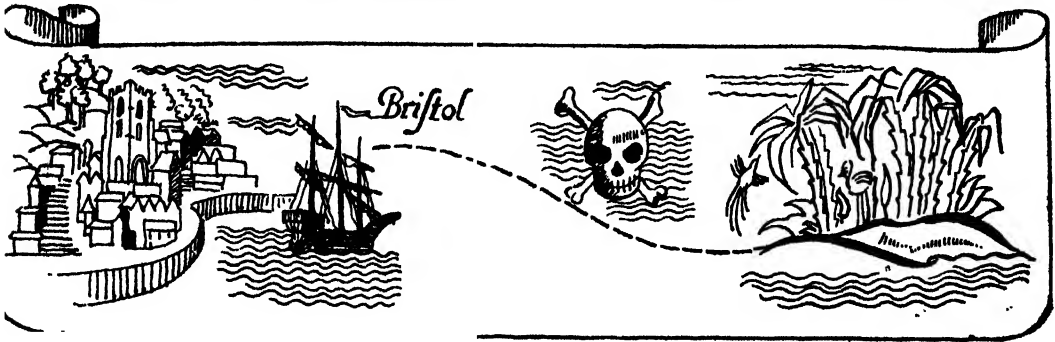
William Makepeace Thackeray.

Of heat the express-train drew up there
Unwontedly. It was late June.

The steam hissed. Someone cleared his
throat.

No one left and no one came
On the bare platform. What I saw
Was Adlestrop—only the name

And willows, willow-herb, and grass,
And meadowsweet, and haycocks dry,



We can enjoy every minute of this poem.
We will speak it all through and follow the
story and see who is in it. (Everybody can
speak the narrative and the two fiercest
members of the class can take the characters
of Gorging Jack and Guzzling Jimmy, and
someone can be Little Bill.)

Lesson 6

We will finish this group of lessons by
returning to the English countryside and
instead of taking a road we will take a train.
The poet tells how the train pulled up at a
little station one hot afternoon in June and
he saw the country very vividly for a
minute. In that minute a bird sang and then
all the birds right through that county and
the next took up the song. When you speak
the poem get the heat of the day, the noisy
train, the lovely countryside and the bird-
songs into it.

ADLESTROP

Yes. I remember Adlestrop—
The name, because one afternoon

No whit less still and lonely fair
Than the high cloudlets in the sky.

And for that minute a blackbird sang
Close by, and round him, mistier.
Farther and farther, all the birds
Of Oxfordshire and Gloucestershire.

Edward Thomas.

Here is another charming poem by John
Drinkwater. The teacher may explain that
the meaning of the word *vigil* is *watchfulness*.
The word is generally applied to keeping
awake during the time usually given to
sleep. We sometimes speak of a young
esquire of olden days keeping vigil during
the night preceding the morning when he
was to be knighted.

VIGIL

I watch the good ships on the sea,
Yet never ship comes home to me.

Out of the crowded ports they sail
To crowded ports that cry them hail.

And still they bring no word to me,
Tall-masted ships upon the sea.

As gallant messengers they go
Laughing against all winds that blow.

Yet never ship upon the sea
Bears blessed merchandise for me.

I watch them pass from friend to friend
All day from world's end to world's end.

No pleasant ship comes down to me
Along the long leagues of the sea.

Nor sign nor salutation made,
Beyond the far sea-line they fade.

Yet as I watch them on the sea
All ships are piloted by me.

John Drinkwater.

AGE GROUP TEN TO ELEVEN

Lesson 1

The poems in this section are not developed from any particular theme. First of all let us look at a ballad. A ballad is a story-poem written in a very simple rhythm. It has to be said very interestingly to prevent it from being monotonous. Often, ballads have a chorus and this one has. In every stanza the second and fourth lines are chorus lines, so these can be spoken by everybody. The rest of the poem can be spoken by a narrator or story-teller, the sisters—three of them—and the knight. Coming in to time with the chorus will need practice, and the solo speakers must also be sure to pick up the rhythm.

Ballads are poems usually handed down by word of mouth for a long time before being written down. Consequently they rarely have individual authorship. In the following ballad the word *dow* is a dialect word pronounced *doo* and meaning *dove*.

THE RIDDLING KNIGHT

There were three sisters fair and bright,
Jennifer, Gentle and Rosemary,

And they three loved one valiant knight,
As the dow flies over the mulberry-tree.

The eldest sister led him in,
And barred the door with a silver pin.

The second sister made his bed,
And placed soft pillows under his head.

The youngest sister that same night,
Was resolved for to wed that valiant knight.

"And if you can answer questions three,
O then fair maid, I'll marry wi' thee.

O what is louder nor a horn?
Or what is sharper nor a thorn?

Or what is heavier nor the lead?
Or what is better nor the bread?

Or what is longer nor the way?
Or what is deeper nor the sea?"

"O shame is louder nor a horn,
And hunger is sharper nor a thorn.

O sin is heavier nor the lead,
And blessing's better nor the bread.

O wind is longer nor the way,
And love is deeper nor the sea."

You have answered aright my questions
three,

Jennifer, Gentle and Rosemary,
And now fair maid, I'll marry wi' thee,
As the dow flies over the mulberry-tree.

Old Ballad.

Lesson 2

This poem, *The Galley-Rowers*, is an ideal one for choral verse-speaking. It has the pull of the oars all through it, and the pull is by a number of rowers. Speak the poem chorally and go through it at least once getting the children to feel the pull of the oars with their arms. The recital should have two groups of speakers, so that the question, *Where are you bound . . . ?* is asked by the second group.

THE GALLEY-ROWERS

Staggering over the running combers
The long-ship heaves her dripping flanks,
Singing together, the sea-roamers
Drive the oars grunting in the banks.
A long pull,
And a long long pull to Mydath.

"Where are ye bound, ye swart sea-farers,
Vexing the grey wind-angered brine,
Bearers of home-spun cloth, and bearers
Of goat-skins filled with country wine?"

"We are bound sunset-wards, not knowing,
Over the whale's way miles and miles,
Going to Vine-Land, haply going
To the Bright Beach of the Blessed Isles.

"In the wind's teeth and the spray's stinging
Westward and outward forth we go,
Knowing not whither nor why, but singing
An old old oar-song as we row.
A long pull,
And a long long pull to Mydath."

John Masefield.

Lesson 3

Walter de la Mare has written many poems that give delight to children. Ask them how many kinds of "light" they can think of. Sunlight, moonlight, starlight will be suggested. Twilight, electric light and gaslight are also possibilities. Some of these words are themselves poetical. This little poem brings in some unusual sorts of light besides those one expects.

DREAM-SONG

Sunlight, moonlight,
Twilight, starlight—
Gloaming at the close of day,
And an owl calling,
Cool dews falling
In a wood of oak and may.

Lantern-light, taper-light,
Torchlight, no-light:
Darkness at the shut of day,

And lions roaring,
Their wrath pouring
In wild waste places far away.

Elf-light, bat-light,
Touchwood-light and toad-light,
And the sea a shimmering gloom of grey,
And a small face smiling
In a dream's beguiling
In a world of wonders far away.

Walter de la Mare.

This poem lends itself to a more difficult form of choral work. The "lights" can be taken by small groups. For example, in the first stanza:

Sunlight.....	1st group
moonlight	2nd "
Twilight.....	3rd "
starlight.....	4th "
Gloaming at the close of day	5th "
And an owl calling	6th "
Cool dews falling	
In a wood of oak and may..	7th "

When a line is broken in this way, care must be taken that the break is not heard when the line is spoken. The voice must take up the phrase smoothly and with perfect timing. Only detailed practice can achieve this.

The next poem can follow on Lesson 3. The third stanza gives a list of garden flowers, which can be listed in the same way as the lights in *Dream-Song*. The lines of Kate and those concerning Jack can be spoken by different groups.

WIND'S WORK

Kate rose up early as fresh as a lark,
Almost in time to see vanish the dark;
Jack rather later, bouncing from bed,
Saw fade on the dawn's cheek the last flush
of red:
Yet who knows
When the wind rose?

Kate went to watch the new lambs at their
play

And stroke the white calf born yesterday;
 Jack sought the woods where trees grow tall
 As who would learn to swarm them all:
 Yet who knows
 Where the wind goes?

Kate has sown candy-tuft, lupins and peas,
 Carnations, forget-me-not and heart's ease;
 Jack has sown cherry-pie, marigold,
 Love-that-lies-bleeding and snap-dragons
 bold:
 But who knows
 What the wind sows?

Kate knows a thing or two useful at home,
 Darns like a fairy, and churns like a gnome;
 Jack is a wise man at shaping a stick,
 Once he's in the saddle the pony may kick.
 But hark to the wind how it blows!
 None comes, none goes,
 None reaps or mows,
 No friends turn foes,
 No hedge bears sloes,
 And no cock crows,
 But the wind knows!

T. Sturge Moore.

Lesson 4

We will finish this group with poems which can be included in a Christmas programme. Besides poems, a nativity mime could be acted. Children representing angels can be easily dressed and, if the mime is performed to music and instruments are carried by the mimers, it is very effective. The programme

could finish with a simple reading of the nativity story from the Bible.

First we will study four simple lyrics.

THE BIRDS

When Jesus Christ was four years old,
 The angels brought Him toys of gold,
 Which no man ever had bought or sold.

And yet with these He would not play.
 He made Him small fowl out of clay
 And blessed them till they flew away.

In creasti Domine.

Jesus Christ, Thou Child so wise,
 Bless mine hands and fill mine eyes,
 And bring my soul to Paradise.

Hilaire Belloc.

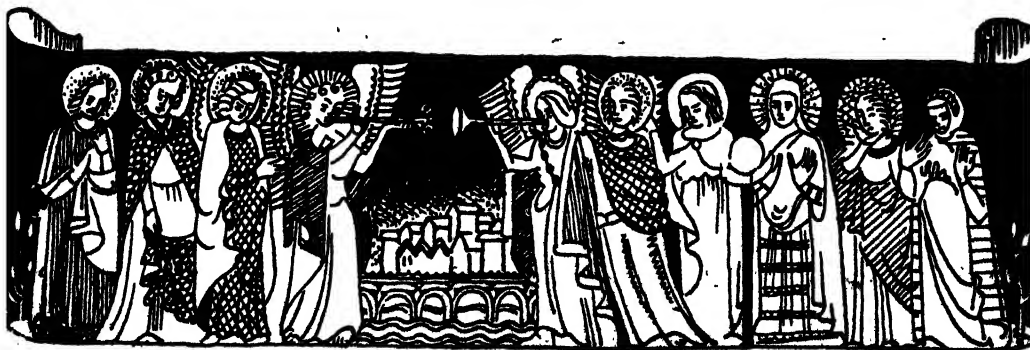
The next poem should be practised by the whole class and then three speakers chose for *We were swallow, moth and mouse.*

THE FIRST MERCY

Ox and ass at Bethlehem
 On a night ye know of them:
 We were only creatures small
 Hid by shadows on the wall.

We were swallow, moth, and mouse;
 The Child was born in our house,
 And the bright eyes of us three
 Peeped at His Nativity.

Hands of peace upon that place
 Hushed our beings for a space—



Quiet feet and folded wing,
Nor a sound of anything.

With a moving star we crept
Closer when the Baby slept;
Men who guarded where He lay
Moved to frighten us away.

But the Babe, awakened, laid
Love on things that were afraid,
With so sweet a gesture He
Called us to His company.

Bruce Blunt.

The third poem tells of the belief that at midnight on Christmas Eve all the cattle kneel down. The solo lines need treating as such. These lines are:

"Now they are all on their knees,"
and

"Come, see the oxen kneel,
In the lonely barton by yonder coomb
Our childhood used to know."

THE OXEN

Christmas Eve, and twelve of the clock.

"Now they are all on their knees,"
An elder said as we sat in a flock
By the embers in hearthside ease.

We pictured the meek mild creatures where
They dwelt in their strawy pen,
Nor did it occur to one of us there
To doubt they were kneeling then.

So fair a fancy few would weave
In these years! Yet, I feel,
If someone said on Christmas Eve,
"Come; see the oxen kneel.

"In the lonely barton by yonder coomb
Our childhood used to know,"
I should go with him in the gloom,
Hoping it might be so.

Thomas Hardy.

The fourth little poem for this section is very well known.

CRADLE HYMN

Away in a manger, no crib for a bed,
The little Lord Jesus laid down His sweet
head,
The stars in the bright sky looked down
where He lay—
The little Lord Jesus asleep on the hay.

The cattle are lowing, the baby awakes,
But little Lord Jesus no crying He makes.
I love Thee Lord Jesus! look down from the
sky,
And stay by my cradle till morning is nigh.

Be near me, Lord Jesus, I ask Thee to stay
Close by me for ever and love me, I pray;
Bless all the dear children in Thy tender
care,
And fit us for Heaven, to live with Thee there.

Martin Luther.

The second stanza should be said softly in a light tone. An effect of gathering in a lot of people is needed in the last stanza.

Lesson 5

In this nativity section we will include a poem which tells a straightforward story and in which the narrative quality must be stressed. Eddi can be characterised and his part spoken as a solo. One group of the children can be the Saxons and another speak the narrative parts of the poem. The atmosphere of the stormy night must be created, and then the quietness of the cattle listening in the chapel.

EDDI'S SERVICE

(A.D. 687)

Eddi, priest of St. Wilfrid
In his chapel at Manhood End,
Ordered a midnight service
For such as cared to attend.

But the Saxons were keeping Christmas,
And the night was stormy as well.
Nobody came to service,
Though Eddi rang the bell.

"Wicked weather for walking,"
Said Eddi of Manhood End.
"But I must go on with the service
For such as care to attend."

The altar-lamps were lighted,—
An old marsh-donkey came,
Bold as a guest invited,
And stared at the guttering flame.

The storm beat on at the windows,
The water splashed on the floor,
And a wet, yoke-weary bullock
Pushed in through the open door.

"How do I know what is greatest,
How do I know what is least?
That is My Father's business,"
Said Eddi, Wilfrid's priest.

"But—three are gathered together—
Listen to me and attend.
I bring good news, my brethren!"
Said Eddi of Manhood End.

And he told the Ox of a Manger
And a Stall in Bethlehem,
And he spoke to the Ass of a Rider,
That rode to Jerusalem.

They steamed and dripped in the chancel,
They listened and never stirred,
While, just as though they were Bishops,
Eddi preached them The Word,

Till the gale blew off on the marshes
And the windows showed the day,
And the Ox and the Ass together
Wheeled and clattered away.

And when the Saxons mocked him,
Said Eddi of Manhood End,
"I dare not shut His chapel
On such as care to attend."

Rudyard Kipling.

Lesson 6

Here we have a choral poem. More speakers are added in each stanza. Thus stanza 1 has only one speaker; stanza 2 begins with two speakers for the two turtle-doves and picks up the speaker of stanza 1 on *A partridge in a pear-tree*. The third stanza is spoken by three for the three French hens, joined by the two turtle-doves, and by the one for the partridge on the partridge line, and so on through the poem until the last stanza runs:

On the twelfth day of Christmas	12 speakers
My true love sent to me	
Twelve lords a-leaping	
Eleven ladies dancing	23 "
Ten pipers piping	33 "
Nine drummers drumming	42 "
Eight maids a-milking	50 "
Seven swans a-swimming	57 "
Six geese a-laying	63 "
Five gold rings	68 "
Four colley birds	72 "
Three French hens	75 "
Two turtle-doves	77 "
And a partridge in a pear-tree	78 "

(Token numbers of speakers will have to be used to keep the numbers reasonable.)



THE TWELVE DAYS OF CHRISTMAS

The first day of Christmas,
My true love sent to me
A partridge in a pear-tree.

The second day of Christmas,
My true love sent to me
Two turtle-doves and
A partridge in a pear-tree.

The third day of Christmas,
My true love sent to me
Three French hens,
Two turtle-doves and
A partridge in a pear-tree.

The fourth day of Christmas,
My true love sent to me
Four colley birds,
Three French hens,
Two turtle-doves and
A partridge in a pear-tree.

The fifth day of Christmas,
My true love sent to me
Five gold rings,
Four colley birds,
Three French hens,
Two turtle-doves and
A partridge in a pear-tree.

The sixth day of Christmas,
My true love sent to me
Six geese a-laying,
Five gold rings,
Four colley birds,
Three French hens,
Two turtle-doves and
A partridge in a pear-tree.

The seventh day of Christmas,
My true love sent to me
Seven swans a-swimming,
Six geese a-laying,
Five gold rings,
Four colley birds,
Three French hens,
Two turtle-doves and
A partridge in a pear-tree.

The eighth day of Christmas,
My true love sent to me
Eight maids a-milking,
Seven swans a-swimming,
Six geese a-laying,
Five gold rings,
Four colley birds,
Three French hens,
Two turtle-doves and
A partridge in a pear-tree.

The ninth day of Christmas,
My true love sent to me
Nine drummers drumming,
Eight maids a-milking,
Seven swans a-swimming,
Six geese a-laying,
Five gold rings,
Four colley birds,
Three French hens,
Two turtle-doves and
A partridge in a pear-tree.

The tenth day of Christmas,
My true love sent to me
Ten pipers piping,
Nine drummers drumming,
Eight maids a-milking,
Seven swans a-swimming,
Six geese a-laying,
Five gold rings,
Four colley birds,
Three French hens,
Two turtle-doves and
A partridge in a pear-tree.

The eleventh day of Christmas,
My true love sent to me
Eleven ladies dancing,
Ten pipers piping,
Nine drummers drumming,
Eight maids a-milking,
Seven swans a-swimming,
Six geese a-laying,
Five gold rings,
Four colley birds,
Three French hens,
Two turtle-doves and
A partridge in a pear-tree.

The twelfth day of Christmas,
 My true love sent to me
 Twelve lords a-leaping,
 Eleven ladies dancing,
 Ten pipers piping,
 Nine drummers drumming,
 Eight maids a-milking,
 Seven swans a-swimming,
 Six geese a-laying,
 Five gold rings,
 Four colley birds,
 Three French hens,
 Two turtle-doves and
 A partridge in a pear-tree.

Anon.

Lesson 7

Finally we have a nonsense poem which can be taken in two parts, one half of the class speaking the verses and the other the refrain. There should be a change over of parts later on, because the verses form such excellent practice, not only for speech and light agile movement through the phrases, but also in steadying the breath output so that it spreads easily over the two lines, and yet the meaning is duly observed. This rhyme can also be divided among three sections—the first taking line 1, the second following with line 2, and the third taking the chorus. Each section must come in exactly on the

beat and must keep the light staccato effect throughout.

DEM BONES GONA RISE AGAIN

In come de animals, two by two,
 Hippopotamus and a kangaroo.
 Dem bones gona rise again!

In come de animals three by three,
 Two big cats and a bumble bee.
 Dem bones gona rise again!

In come de animals four by four,
 Two through de window and two through de door.
 Dem bones gona rise again!

In come de animals five by five,
 Almost dead and hardly alive.
 Dem bones gona rise again!

In come de animals six by six,
 Three wid clubs and three wid sticks.
 Dem bones gona rise again.

In come de animals seven by seven,
 Four from hell and de others from heaven.
 Dem bones gona rise again!

Dem bones gona rise again,
 Dem bones gona rise again,
 I knows it, yes I knows it shuah,
 Dem bones gona rise again!

Negro Song.



SPEAK PLAIN AND TO THE PURPOSE

SECTION THREE—THE TEACHING OF MIME



MIME

INTRODUCTION

IN THIS article the suggestions made are based on the presumption that the teacher has knowledge of physical training, but not of mime as a specialised subject. Consequently, formal mime movements have been avoided and only simple exercises included. The course outlined is elementary. There are several good books which deal with mime from the specialist's point of view. Mime in a more advanced form can be taught only by those who have taken a practical course in the subject. The majority of teachers are unacquainted with it and their greater need is supplied here. It is hoped, however, that the ideas and material will be of use to all teachers of young children.

The lessons are planned to suggest work under various conditions. The use of different material will make it possible to adapt the work for any age group.

Firstly, the principle to remember is that the children should be encouraged to express themselves from "inside". Copying the teacher is of little value, although demonstration of stronger and more economic movement is useful after the children have attempted the work themselves.

Secondly, the aim should be for freedom of movement, with the whole body used when necessary. Co-ordination and control will develop as exercises are performed.

Mime is the ability to convey meaning to an audience by bodily movement and without speech. Its educational advantage is that it stimulates the imagination and encourages easy and expressive movement. For example, children consider the size and weight of objects when asked to handle them in pretence, and they learn to observe detail accurately.

The first lessons are planned for the age group seven to eight, and it will be supposed that the children have to remain seated at their desks owing to the restriction of space. This means that once the seating position is corrected, the back being straight with no unnecessary tension in the body, movement is concentrated on the head, shoulders, arms and hands.

AGE GROUP SEVEN TO EIGHT

Lesson 1

Exercises :

1. Look at your hands.
2. Curl up the fingers slowly, then stretch them.
3. Do this several times.
4. Clench your hands, then let them uncurl.
5. Tap your little finger on the desk.
6. Tap your fingers in turn till you get to the thumb.
7. Tap the fingers in turn quickly several times.

Occupations :

1. Pick up an imaginary apple in your left hand.
2. Now pick up an orange in your right hand.
3. Put down the orange and feel the skin of the apple—the places where it is rough and those where it is smooth.
4. Remove the stem of the apple.
5. Put down the apple and pick up the orange.
6. Feel the outside of the orange and notice its size and shape.
7. Notice its rough skin and the little nobbles on it.
8. Dig your thumb gently into the orange and peel it.

9. Gather up the peel of the orange into a small heap.

10. Break the orange into sections and arrange them on a plate.

Story :

We are going to imagine we are at the seaside and on the beach. Your desks are going to be the beach. Touch the sand and let it run through your fingers. Dig a little way into the sand and feel it cold and damp underneath. Pick up some little pebbles. Feel how the sea has washed them quite smooth. One is a funny shape, so feel the shape of it. Pick up a piece of seaweed and arrange it on the sand. Trace the shape with your finger. Dig a little hole in the sand and let the sea run in. Dabble your fingers in the water. Take a bucket; fill it with sand and tip out a little sand-castle. Pat it into a good shape. Add shells for windows and doors.

Alternative Occupations :

1. Pick up various coins—pennies, half-pennies, sixpences shillings, two shillings, half-crowns. Unfold ten shilling and pound notes.

2. Pick up a teaspoon. Ladle out sugar, tea, pepper. Pick up a larger spoon. Measure out other commodities.

3. Pick up rings and place them on the fingers. Wind a watch and strap it on to the wrist.

Alternative Stories :

1. Handling sticks, leaves and berries in a wood.

2. Handling little ornaments, a small clock, and a photograph frame in a room.

3. Cutting out and making paper chains and stars for decoration.

The teacher will be able to think of her own occupations and stories, once the idea is grasped.

Exercises on each lesson should be recapitulated at the following lesson, so that a progression of exercises is made.

Lesson 2

Exercises :

1. Stretch the fingers out gently keeping them together. Stretch out the arms; raise the hands with a wrist movement, then drop them.

2. Repeat the exercise several times.

3. Raise the hands with a wrist movement, twist the hands round backwards and into the original position.

4. Repeat the exercise, first twisting the hands forward.

Occupations :

1. Pick up a musical box in the left hand.

2. Play it with the right hand.

3. Be sure you know the size of the box and keep it the same size.

4. Pick up a glass jar.

5. Unscrew the top.

6. According to the size of the jar, put in your hand or finger.

7. Bring out a sweet and hold it in the fingers.

8. Screw up the top again.

9. Brush your hair.

10. Comb it into position.

Story :

We are going into the kitchen. Here it is, all bright and shining. Your desks are going to be the kitchen sink. At the side of the sink there is something to be washed up. It can be a small flower-pot, the best tea-service, or some of your doll's china.

Put the plug in the sink. Now turn on the hot-water tap. Feel the water to make sure it is warm. Put some soap flakes in the water and dissolve them. Wash the objects carefully and place them by the side of the sink. When you have finished, take the plug out of the sink and let the water out. Then rinse the things you have washed under clear running water. Take a clean cloth and dry them. Take a cloth and clean the sink. Wash your hands and dry them on a towel.

Alternative Occupations :

1. Cutting out with scissors and pasting in a scrap-book.

2. Hammering nails into wood.
3. Playing the piano.

Alternative Stories :

1. Making tea and preparing the table.
2. Playing a game of draughts.
3. Finding wood suitable for spills. Cutting and arranging them.

Exercises :

1. Have a good stretch.
2. Stretch your arms in front of you.
3. Put your arms round a bear much larger than you are. (They won't go far round him, only to his sides.)
4. Let the bear go, but keep your arms in that position with the hands downwards.
5. Bend your arms at the elbows letting your hands come in to your front.
6. Repeat this several times.
7. Swing the arms gently above the head.

Occupations :

1. Take a roll of ribbon.
2. Take out the pin.
3. On your desks measure twelve inches of ribbon.
4. Take the scissors and cut the piece off.
5. Tie the ribbon into a bow.
6. Put the bow on the branch of a Christmas-tree, high above your head.
7. Take a candle.
8. Strike a match and light the candle.
9. Watch the flame, then blow it out.

Story :

We are going to imagine that we keep a sweet shop. In the shop we have lots of boxes of sweets and some bottles on a shelf. Arrange the boxes and scales on your desk. Put some bags ready. Arrange the bottles at the back of the desk. The first order is for a quarter of chocolates. Weigh them from a box, and don't forget to put the quarter weight on the scales. Tip them into a bag and take the money for them. They cost tenpence. The customer needs twopence change, because

she has given you a shilling. Now sell a bag of toffee and take the money. Now two ounces of fruit drops out of a jar. Put away the money in a little box.

Alternative Occupations :

1. Dust and arrange some books.
2. Fold some clothes.
3. Pack things into a case.

Alternative Stories :

1. Make a cake or tart.
2. Scrub and polish furniture in a room.
3. Conduct an orchestra and play various instruments.

Lesson 4

Exercises :

1. Drop the head forward.
2. Lift it slowly.
3. Repeat the exercise.
4. Drop the head backwards and raise it.
5. Repeat.
6. Drop the head from side to side.
7. Drop the head forward and roll it right round, keeping it dropped.

Occupations :

1. Look in a mirror on your desk.
2. Pick up a crown and place it on your head.
3. Watch yourself in the mirror and remember that the crown is heavy.
4. Pick up an empty market basket and place it on your head.
5. Remove the basket and fill it with cherries.
6. Now place the heavy filled basket on your head.
7. Drop your head on to your arms and sleep.
8. Raise your head as though you have heard a noise.
9. Listen attentively.
10. Recognise a familiar sound.

Story :

We are going to an exhibition of model aeroplanes. We have arrived there, so look

all round at the large room. Now imagine you have found an interesting model and have it on your desk. Look at it and touch it carefully. Now wind it up and send it off on a flight round the room. Watch every swoop it makes and don't take your eyes off it. Open a book with pictures in it and turn the pages. Imagine the blackboard is a film screen and a film is being shown on it. Watch the aeroplane in the film. Finally, you have come outside again and there is a plane high in the sky. Watch it till it is out of sight.

Alternative Occupations :

1. Watch a football match.
2. Look for a small pin lost on the desk.
3. Your head is a clock ticking from side to side. Introduce nods for the strikes.

Alternative Stories :

1. A treasure hunt.
2. Look at platform indicators during a train journey. Watch the trains.
3. Visit the Zoo and see various animals.

Lesson 5

Exercises :

1. Roll the shoulders gently forward.
2. Now raise them.
3. Roll them back and then down.
4. Repeat several times.
5. Push both shoulders forwards then back—smoothly, not jerkily.

Occupations :

1. Imagine your shoulders are train wheels.
2. Turn them as the train slowly starts.
3. Throw a ball in the air.
4. Now throw the ball low, but a long way.
5. Throw a spear a long way.

Story :

We are going to arrange a doll's house. The house fits your desk and is placed on it. Take a duster and dust the outside. Then brush out the rooms and stairway. Remove the little carpets and shake them. Put

them back on the floors. Polish the door-handles and the taps in the bathroom. Clean the windows. Arrange the furniture in each room. The garden is going to have some tiny real shrubs in tubs. Take the tubs, fill them with earth, then plant the little shrubs and put them in front of the doll's house, so that they form the beginning of the garden.

Make sure that the appropriate movements are correctly made throughout this story. Go over difficult parts again.

Alternative Occupations :

1. Pick up some darts and play a game with a simple dart board drawn on the blackboard.
2. Lift objects from a high shelf; put them down. Use them. Then replace them.
3. Wave to friends. Shake hands with them. Introduce a formal salute.

Alternative Stories :

1. Arrange and play with a toy railway.
2. Go for a country walk, pick flowers and gather blackberries, having to reach for them.
3. Build a camp fire and cook a meal on it. Eat the food.

Lesson 6

By now a full progression of exercises should be established. Vary them a little week by week. The progression should run:

- | | |
|------------|----------------------|
| 1. Hands. | Perform with arms in |
| 2. Wrists. | "hugging big bear" |
| 3. Arms. | position. |

Rest the arms by going on to head and neck, then shoulders.

Occupations :

1. Take a spinning-top. Put a string round it. Spin it on your desk.
2. Make a plait of long strands of coloured wool. Tie the ends together and pin the knot to the outside corner of your desk. Divide the strand into three groups. Now plait them.

3. Wind wool from a skein into a ball. Imagine someone is holding the skein for you.

Story :

We are visiting a theatre to see a play. You have reached the box-office where you buy yourself a ticket. Your desk has a plan of all the seats in the theatre on it. Choose your seat, hand over the money and receive your ticket. You have reached your seat and are waiting for the play to begin. Buy a programme, open it and read about the play. The orchestra has been playing, so clap the musicians.

You are going to visit the backstage of a theatre. We see the stage electrician, who has a large board full of switches. He allows you to try switching on and off some of the lights.

You see the large handle by which the curtain is raised and lowered, and try winding it.

You are in a room full of wigs and hats. Try on one of the hats and see what you look like.

Now you have arrived home after the play, and you take pen and paper and write a letter telling your friend all about it.

Alternative Occupations :

1. Take knitting-needles and wool, and cast on stitches. Then knit them.
2. Put together a jig-saw puzzle.
3. Brush and comb the coat of a small dog.

Alternative Stories :

1. Visit a farm yard. Collect eggs, bridle horses, milk cows, make cream and butter.
2. Visit a carpenter's shop. Handle the wood and tools. Try the saw and other tools.
3. Pump up the tyres of a bicycle. Polish the bright parts and the leather seat. Dust the spokes of the wheels. Go for a ride, using the brakes carefully.

AGE GROUP EIGHT TO NINE

The following six lessons are designed for use in a classroom of moderate size in which

the desks have been pushed back. Freedom of movement is impossible, but the children can move about.

Lesson 1

Exercises :

1. Sit down and remove your shoes and socks.
2. Look at your feet.
3. Stretch out the toes and make them alive.
4. Put your handkerchief on the floor.
5. Try to pick it up with the toes.
6. Put it down and pick it up with the other foot.
7. Put on socks and soft shoes.
8. Stand up and "feel" your foot on the floor.
9. Point the toe and tap delicately with it on the floor.

Occupations :

1. Tiptoe towards a friend and surprise him.
2. Feel the temperature of the sea with your toes.
3. Then paddle.
4. Walk over warm sand.

Story :

You are in a wood seeking primroses. Turn back twigs under which the plants might be hidden. It is early for primroses, so there are very few. You find a large plant yielding one or two. Pick them. Walk round and search for more flowers. When you have a small bunch come out of the wood. On a bank you see violets, so scramble up the bank—dig in your feet—and pick some. Break off some grass stems and tie up your bunch.

Alternative Occupations :

1. Cross a stream by stepping-stones.
2. Take a rope and skip.

Alternative Stories :

1. You are a cat and have adventures.

2. You mark out and play a game of hopscotch.

3. You are attackers creeping through an enemy village.

Lesson 2

Exercises :

1. Stand firmly with the feet apart.
2. Lift and shake the right foot.
3. Then the left.
4. Bend the knees slightly.
5. Repeat several times.
6. Swing the right leg gently.
7. Swing the left.

Occupations :

1. Stand as though you are a policeman.
2. Take a few steps—if you have room.
3. Imagine you are a shadow.
4. Move a little more.
5. Become very old.
6. Walk slowly with a stick.

Story :

You are going to choose a character and be that person. (Receive suggestions.) Choose a character. Now think what the character was like as a child. Where did she go to school? How old is she? What is she wearing? Let's think of everything, from the skin right up to the jewel and pins in her hair. How does she do her hair? What does she eat? What books does she read? Find out all about her character, and then shut your eyes and think of yourself as growing up like that person, and being that person to-day. Think of dressing like that person, and of what you have been doing all day. Now walk across the room as that person.

Alternative Occupations :

1. Walk like a person who is very old.
2. Walk as though you are a witch or a fairy.
3. Imagine you are a dustman emptying dustbins.

Lesson 3

Exercises :

1. Stand firmly on both feet.
2. Raise your hands high above your head.
3. Drop forward floppily from the waist.
4. Raise the upper half of your body.
5. Repeat twice, making sure you are easy and floppy.
6. Drop forward and swing yourself left, back, right and forward.
7. Stand in a good position.

Occupations :

1. Think of a tree.
2. Be that tree and let the wind blow your branches—head and arms.
3. Be a weather vane on a steeple; your position changes as the wind blows.
4. Be a doll with a clockwork mechanism. You have been wound up. Now move.

Story :

To-day we are going to the Zoo, and we are going to pretend we are some of the animals.

We come to the monkeys. Think of their long arms and how they hang. Sit on a branch like a monkey. Swing to another branch.

We pass on to the lions. First of all be a lion asleep. Get up slowly and walk to and fro.

Be a bear and sit on your hind legs for buns.

Be a sea lion and swim. Then catch fish in your mouth when the keeper throws it.

Be a kangaroo with strong hind legs and little arms. Remember your tail.

To finish, be an elephant—and remember your trunk.

Alternative Occupations :

1. Imagine you are a rabbit. Peep out of your burrow. Come out and hop about.
2. Sit on the floor and row a boat.
3. Be a sailor pulling up the anchor.
4. Visit a large store and walk round the toys in the toy department.
5. Visit a port and walk on the quay. Go aboard a ship.

Lesson 4

Exercises :

1. Stand with the feet slightly apart.
2. Bend the knees several times.
3. Jump, but don't let your toes leave the ground.
4. Jump, leaving the ground but letting your toes leave last. Bend your knees slightly when you land.

Occupations :

1. Place a ladder against an apple tree.
2. Climb the ladder.
3. Pick the apples, place them in a basket and lower them to the ground by means of a rope.
4. Ascend a spiral staircase. Make sure the spiral remains the same size all the time.
5. Go out on to a tower at the top and look down at the country below.

Story :

There was a knight who visited a lady who lived in a high tower in a big castle. The knight rode along the road leading to the castle. He got to the gate and blew upon his horn to let the lady know he was there. The lady was at the top of the tower. She ran down the spiral staircase to see the knight, but it took her so long that the knight thought she couldn't be at home, so he rode away. The lady saw him going and she waved, but he didn't see. So she sadly and slowly climbed to the top of the tower again.

Now all be the knight riding his horse through the wood in the summer. Blow the horn and look at the castle to see whether the lady is coming. Now give her up, and ride away in disappointment.

Now be the lady. Look out of the tower—remember how high it is from the ground. Run down the stairs, and watch the knight riding away. Go up the stairs again.

Divide into parts and act the story as a little scene. One be the lady and one the knight. Remember what they are wearing. The lady is in a long dress and the knight in armour.

Alternative Occupations :

1. Be a postman delivering letters to houses with steps leading to the front doors.
2. Cross a railway by means of a bridge.
3. Climb a step ladder and hang a picture on the wall.

Alternative Stories :

1. Climb up to an attic and explore it.
2. Climb a mountain with two others having a rope between you.
3. Act the story of *Humpty Dumpty* with all the king's horses and all the king's men.

Lesson 5

Exercises :

Establish a progression of exercises. From now on vary them a little, but keep a sensible continuity without working one part of the body too hard. Never tire any part.

1. Hands.
2. Arms.
3. Toes.
4. Feet.
5. Ankles (turning and stretching).
6. Knees.
7. Legs.
8. Waist (including dropping forward and sideways).
9. Shoulders.
10. Head.

Occupations :

1. Take a chair each.
2. Sit on it and imagine you are driving a car.
3. Drive a milkcart horse.
4. Drive a hay cart.
5. Sit on a horse as though you are riding it.

Story :

You are going to form an army convoy on its way to manoeuvres. First of all you drive a motor cycle as an outrider. Now put some chairs in a square, and stand and sit in the square imagining it to be a tank. Now make another square of chairs for a

lorry. Put four chairs together for a gun carrier. Now choose a part. You can be an intelligence officer and have a map telling the convoy where to go. You can be soldiers in the tank or lorry, or gunners in the carrier drawing the gun.

The convoy starts off in daylight, but it gets dark, so put on the headlights and peer at the road.

Alternative Occupations :

1. Drive a bus.
2. Push a heavy wheelbarrow.
3. Imagine you are a helmsman and steer a ship.

Alternative Story :

1. Pack suitcases ready for a holiday and take them to the station.
2. Go to the fair and have rides on the various amusements.
3. Form a Red Indian village.

Lesson 6

Exercises :

Concentrate on co-ordination of various parts of the body.

Occupations :

1. Drive a stake into the ground.
2. Fry fish over a fire.
3. Crack open a coconut and drain the milk.

Story :

Divide into groups of three. You have been shipwrecked and are rowing towards an island. Your boat is beached and you climb ashore. Look round you and decide to build a fire. Collect sticks; one of you arrange them and light a fire with matches. Meanwhile, one of you make a fishing-rod with a stick and a bit of string from your pocket. Tie on bait and row the boat out to sea. Catch a fish and clean it. Bring it back to the fire. The third person finds some coconuts. Gather them. Remove the outside part and break the shell of the nut.

Break it into halves to form drinking cups and fill them with coconut milk. Return to the fire and settle round it. Cook and eat the fish and some coconut, and drink the coconut milk. Settle down to rest.

Alternative Occupations :

1. Go shrimping in shallow water.
2. Catch tiddlers and carry them home in a jar.
3. Teach a kitten to play with a piece of string.

Alternative Stories :

1. Go for a picnic. Begin with a car ride and include country occupations.
2. Build a dam across a stream and form a pool.
3. Build a log cabin and live in it.

AGE GROUP NINE TO TEN

From now onwards the lessons have been planned to take place in a school hall, where the children should be able to move about freely. The introduction of formal mime actions has been avoided, apart from a few easy ones. When these are used, the children must be taught to make the gesture on the exact word. Music is necessary; if possible it should be supplied by a pianist who can follow the exercises. Failing this, a rhythm can be beaten on a drum. Great care should be taken to encourage the child's natural sense of rhythm.

All lessons in mime should begin with exercises. Those already suggested should be used together with free, full body movements, the children going round in a circle or utilising the whole length of the hall. The exercises should be varied to suit the particular requirements of each group, the teacher bearing in mind all the time that good bodily movement is the basis of mime and dramatic work. The amount of time given to exercises can be regulated according to the amount of other movement done by the class and, of course, the length of the lesson.



CHILDREN IN "ANGEL" POSITIONS

If the lesson lasts half an hour, exercises and occupations could reasonably take up half of that time and the rest of the lesson could be given to miming a story or poem.

The beginning of characterisation and of acting in pairs has already been suggested. Characterisation should be regarded as second-hand experience and not as something achieved by poise and gesture imposed on the child by someone else.

By introducing mime with large groups, the valuable lesson of shared work is taught and the organisation of the teaching is easier. If a large class is being taught it can be divided and the watchers asked for helpful suggestions. The ultimate results from a class encouraged to watch and criticise are of great value, although the progress is slowed down.

(Only very brief work was done on the "angel" positions illustrated above, but although the stances are weak there is a beginning of good facial expression and hand movements. Also—and most importantly—there is obvious sincerity in the group.)

Lesson 1

Exercises to music concentrating on the feet:

Play a march and let the children listen to it. Then, to the music:

1. Walk round the room keeping time.
2. Who would walk with that sort of tread? (Soldiers and policemen will probably be suggested.)
3. Choose one of the people suggested and walk round as that person.

Play a waltz and treat it in the same way. (Dancers or fairies will probably be suggested.)

Play records suggesting a place or a story, and ask the children to sit and listen, and imagine they are at the place or seeing the story acted.

Eric Coates' *London Suite* is excellent for this practice. Records are best for the work, but if no gramophone is available, piano music will have to be used. At first, the teacher will have to give help over listening, but after a little experience the children's ideas usually flow freely.

Lesson 2

Exercises to music concentrating on the waist.

Then perform simple acts to music, making sure that everyone is in time:

1. Jumping.
2. Skipping.
3. Throwing a ball.
4. Hammering a nail.
5. Walk round the room to music imagining you are a woodcutter carrying a heavy axe. Stop by a tree and, swinging the axe to the time of the music, chop down the tree. Put ropes round the tree and drag it to your home.

6. Be the woodcutter again and be in the wood in the evening. You lose your way. Walk with hesitation looking for a path. Remember it is not daylight.

7. In the same wood be an owl seated on the branch of a tree and watching something happening a little way off.

8. Now be a tiny mouse in a hedge.

9. Back in the wood imagine you are a bear walking along a path on your way home.

10. Now be yourself walking slowly, then getting quicker until you run and reach your home.

Lesson 3

Exercises to music concentrating on hands and arms.

Then play a rhythm. Suggest an action

suitable to it. Help the children to fit the action to it.

1. Rowing a boat.
2. Mounting the stairs.
3. Galloping on a horse.
4. Winding a gramophone.
5. Curtsey and bow to music.

In the curtsey slide the right foot back with a slightly circular movement and then put the weight on it. In the bow slide the left foot back a little and bow slightly over the right foot with the weight on the left.

Listen to simple rhythms.

Clap them when the music stops.

Repeat with more complicated rhythms.

Lesson 4

Exercises to music concentrating on the shoulders.

Play a simple song or nursery rhyme. Let the children sing it. Ask them to recount the story it tells. Let them work out the occupations or actions of the song keeping in time.

An example is given of *Sing a Song of Sixpence*.

Listen to the music of Eric Coates' *Three Bears Suite*. If you listen carefully you can hear the music telling you the story of *Goldilocks and the Three Bears*. Discuss the story and play the record, lifting the needle at places where definite action takes place, such as Goldilocks knocking at the door, and Goldilocks running downstairs after she is discovered.



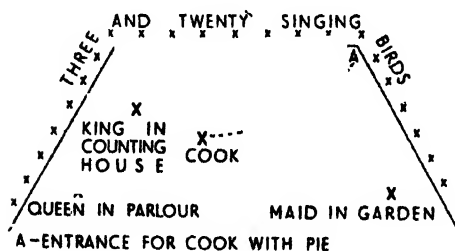
SING A SONG OF SIXPENCE

Sing a song of sixpence,
A bag full of rye;
Four and twenty blackbirds
Baked in a pie;
When the pie was opened
The birds began to sing;
Wasn't that a dainty dish
To set before the King?

The King was in his counting-house
Counting out his money;
The Queen was in the parlour
Eating bread and honey;
The Maid was in the garden
Hanging out the clothes;
There came a little blackbird
Who snapt off her nose.

Characters.—KING. QUEEN. MAID. COOK.
LITTLE BLACKBIRD. 23 OTHER BLACKBIRDS.

The 23 Blackbirds stand round the stage. The 24th enters under the pie. The illustration on page 274 shows the kind of clothing the characters might wear and also demonstrates the way in which they might stand in this particular mime. Until their names are mentioned, the King, Queen and Maid hold their positions.



Sing a song of sixpence,
A bag full of rye;
Four and twenty blackbirds
Baked in a pie;
When the pie was opened
The birds began to sing;
Wasn't that a dainty dish
To set before the King?

[Enter Cook. Places pie before King on word "King." The King looks pleased.]

The King was in his counting-house
Counting out his money;

[Counts; then bites a piece of pie. The Little Blackbird pops up.]

The Queen was in the parlour
Eating bread and honey;

[Queen spreads and eats bread.]

The Maid was in the garden
Hanging out the clothes;

[Maid hangs out a garment.]

There came a little blackbird
Who snapt off her nose.

[Little Blackbird flies over and snaps her nose on word "nose."]

The last two lines are repeated in a whisper. During this, the Little Blackbird flies off; the Maid holds her nose; the King and Queen hold a surprised look.

Lesson 5

Exercises to music concentrating on bending and stretching the whole body.

Work out the story of *Goldilocks and the Three Bears* without music. Divide the class into groups of four and arrange three chairs. These can be the three chairs at the table at first, and the three beds afterwards.

At the beginning of the lesson reduce the story to simple episodes. Everyone can be Goldilocks lost and then finding the house. Fit these episodes to the music when the children can perform them completely. Only a little will be finished in one lesson.

Rehearsal of this mime play would take a term's work, but it is a delightful one to perform. The costumes are simple. Goldilocks presents little difficulty. The bears can be dressed in brown sweaters, long brown trousers and brown socks rolled over the trouser bottoms. The heads can be made of papier mâché, or suggested by cloth caps and paper masks.

Lesson 6

Exercises to music concentrating on poise and walking.

Suggest that a mime should be made up to music and play parts of three or four records, asking the children what they suggest and letting them choose which they like. This mime will depend largely on occupations timed to the music, and the children will need some help at first in choosing which movements are performed to which theme.

Choose a broad theme, such as seaside or country-fair music.

Another way of planning this lesson is to choose the subject and the occupations, then ask the pianist to play music. The children can say whether it is suitable.

For example, the seaside theme could include digging in the sand to, *Oh, I do like to be beside the Seaside.*

Keep the occupations and the tunes very simple.

AGE GROUP TEN TO ELEVEN

These lessons are based on a collection of material. The mimes are planned for presentation to an audience. It will be taken for granted that before working on this material, the teacher will begin each lesson with exercises, occupations and some work of characterisation.

When working on a mime reduce it, during early stages of rehearsal, to a series of small sections which the class as a whole can perform. Let all the children play each character together. Then cast it and change the cast frequently.

Lesson 1

THE LITTLE NUT-TREE

I had a little nut-tree, but nothing would it bear

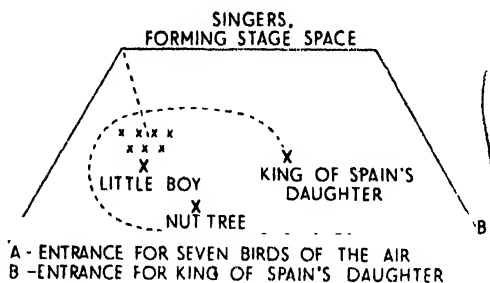
But a silver nutmeg and a golden pear.

The King of Spain's daughter came to visit me,

And all for the sake of my little nut-tree.
I skipped over water, I danced over sea,
And all the birds in the air couldn't catch me.

Characters.—LITTLE BOY. NUT-TREE. KING OF SPAIN'S DAUGHTER. SEVEN BIRDS OF THE AIR.

For the character of the Nut-Tree, the body and arms must represent the tree, and the pear and the nutmeg must grow from the "branches."



I had a little nut-tree, but nothing would it bear

But a silver nutmeg and a golden pear.

[*Little Boy indicates tree, nutmeg and pear, on these words.*]

The King of Spain's daughter came to visit me,

And all for the sake of my little nut-tree.

[*King of Spain's daughter begins her journey at the beginning of third line, and ends it on "nut-tree."*]

I skipped over water, I danced over sea,

[*On "I skipped over water," Little Boy skips four steps forwards. The Seven Birds enter and wait to catch him. He turns, and dances back four steps.*]

And all the birds in the air couldn't catch me.

[*Little Boy dances right round tree and off at Birds' entrance place, followed by Birds. King of Spain's daughter remains admiring tree.*]

Lesson 2

THE SILVER PENNY

"Sailorman, I'll give to you
My bright silver penny,

If out to sea you'll sail me
And my dear sister Jenny."

"Get in, young sir, I'll sail ye
And your dear sister Jenny,
But pay she shall her golden locks
Instead of your penny."

They sail away, they sail away,
O fierce the winds blew!
The foam flew in clouds,
And dark the night grew!

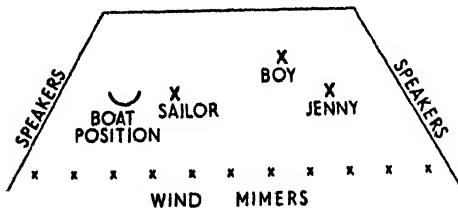
And all the wild sea-water
Climbed steep into the boat;
Back to the shore again
Sail they will not.

Drowned is the sailorman,
Drowned is sweet Jenny,
And drowned in the deep sea
A bright silver penny.

Walter de la Mare.

Characters.—SAILOR BOY. JENNY. ELEVEN WIND MIMERS. SPEAKERS. The Wind Mimers should all have different movement so that it forms a pattern.

This can be an interesting experiment in symbolic movement and is a logical outcome of the movement exercises and occupations such as being "trees with the wind blowing the branches." The line of Wind Mimers should be kept as a close frieze across the front.



[The Sailor stands alone in his boat.]

"Sailorman, I'll give to you
My bright silver penny,
If out to sea you'll sail me
And my sister Jenny."

[Boy offers penny by holding up first finger of left hand. Indicates the sea with right arm; points to self on "me" and with left arm indicates Jenny.]

"Get in, young sir, I'll sail ye
And your dear sister Jenny,
But pay she shall her golden locks
Instead of your penny."

[Sailor indicates boat, helps them in. He touches Jenny's hair on "locks" and waves away the idea of the penny.]

They sail away, they sail away,
O fierce the winds blew!
The foam flew in clouds,
And dark the night grew!

[Sailor pushes off boat as the line of Eleven Winds leaps across in front "blowing." Big, strong movements are needed throughout the third and fourth stanzas to indicate the storm.]

And all the wild sea-water
Climbed steep into the boat;
Back to the shore again
Sail they will not.

[The storm subsides and the line of Winds parts in the middle and they go out left and right. This exit movement begins on, "Sail they will not," and continues until the end of the poem. The Boy, Jenny and the Sailor, slip off during the wild storm movement so that an empty stage is left.]

Drowned is the sailorman,
Drowned is sweet Jenny,
And drowned in the deep sea
A bright silver penny.

Lesson 3

TWO RED ROSES ACROSS THE MOON

There was a lady lived in a hall,
Large in the eyes, and slim and tall;
And ever she sung from noon to noon,
Two red roses across the moon.

There was a knight came riding by
In early spring, when the roads were dry;
And he heard that lady sing at the noon,
Two red roses across the moon.

Yet none the more he stopp'd at all,
But he rode a-gallop past the hall;

And left the lady singing at noon,
Two red roses across the moon.

Because, forsooth, the battle was set,
 And the scarlet and blue had got to be met,
 He rode on the spur till the next warm noon:
Two red roses across the moon.

But the battle was scatter'd from hill to hill,
 From the windmill to the watermill;
 And he said to himself as it near'd the noon,
Two red roses across the moon!

You scarce could see for the scarlet and blue,
 A golden helm or a golden shoe;
 So he cried, as the fight grew thick at the
 noon,
Two red roses across the moon!

Verily then the gold bore through
 The huddled spears of the scarlet and blue;
 And they cried, as they cut them down at the
 noon,
Two red roses across the moon!

I trow he stopp'd when he rode again
 By the hall, though draggled sore with the
 rain;
 And his lips were pinch'd to kiss at the noon
Two red roses across the moon.

Under the may she stoop'd to the crown,
 All was gold, there was nothing of brown;
 And the horns blew up in the hall at noon,
Two red roses across the moon.

William Morris.

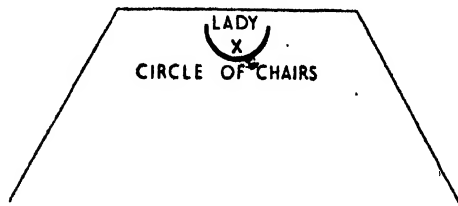
Characters.—LADY. KNIGHT. SIX GOLD
 KNIGHTS. TWELVE SCARLET AND BLUE
 KNIGHTS.

Work on this poem will have to cover a
 number of weeks. A small choir is needed
 and a solo voice for the chorus of *Two red
 roses across the moon.*

In stanza 1, the Knight can be heard
 through the rhythm riding a long way off.
 In stanza 2, the clip-clop of the horse can be
 heard; and in stanza 3, the horse is galloping.

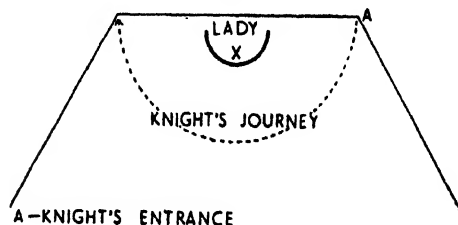
Stanza 4 is a faster gallop. Stanza 5 needs
 an effect of waiting; stanza 6 gives the chaos
 of battle; and 7 indicates triumphant victory
 for the Gold Knights. Stanza 8 is a quiet
 jog and the horse stops; stanza 9 is quietly
 happy.

There was a lady lived in a hall,
 Large in the eyes, and slim and tall;
 And ever she sung from noon to noon,
Two red roses across the moon.



[Lady—raised a few inches from ground if
 possible—enters and looks out.]

There was a knight came riding by
 In early spring, when the roads were dry;
 And he heard that lady sing at the noon,
Two red roses across the moon.

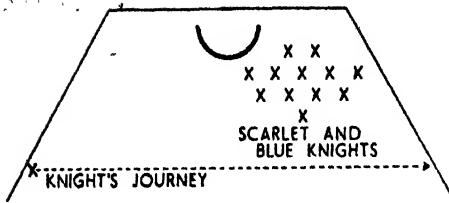


[Knight enters and checks his progress a
 little.]

Yet none the more he stopp'd at all,
 But he rode a-gallop past the hall;
 And left that lady singing at noon,
Two red roses across the moon.

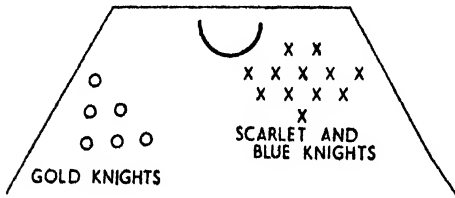
[See Diagram 2 for positions. Lady watches
 as he gallops past and off. Lady goes
 off.]

Because, forsooth, the battle was set,
 And the scarlet and blue had got to be met,
 He rode on the spur till the next warm noon;
Two red roses across the moon.



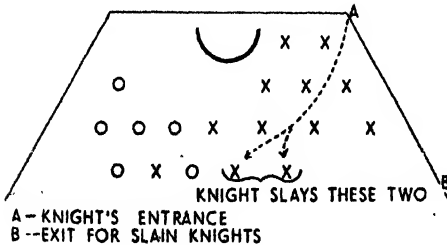
[Scarlet and Blue Knights enter and take formation, then stand still. Knight rides through.]

But the battle was scatter'd from hill to hill,
From the windmill to the watermill;
And he said to himself, as it near'd the noon,
Two red roses against the moon!



[Gold Knights enter and hold formation.]

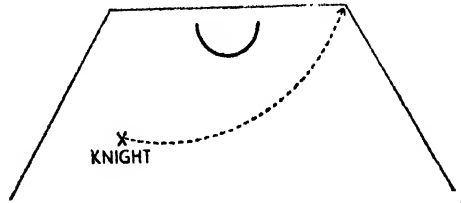
You scarce could see for the scarlet and blue,
A golden helm or a golden shoe;
So he cried, as the fight grew thick at the noon,
Two red roses across the moon!



[Fight begins in conventional fighting positions. Change positions slowly. Slain men stagger out.]

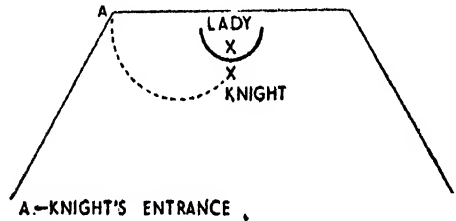
Verily then the gold bore through
The huddled spears of the scarlet and blue;

And they cried, as they cut them down at the noon,
Two red roses across the moon!



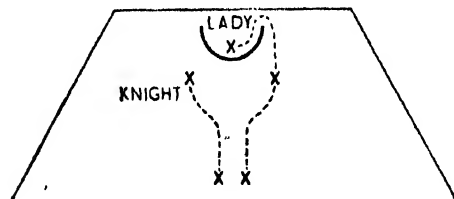
[Gold Knights slay Scarlet and Blue Knights, who exit. Gold Knights pursue them Knight is left and then follows.]

I trow he stopp'd when he rode again
By the hall, though draggled sore with the rain;
And his lips were pinch'd to kiss at the noon
Two red roses across the moon.



[Lady appears as before. Knight enters, rides to her and kisses her on word "kiss."]

Under the may she stoop'd to the crown,
All was gold, there was nothing of brown;
And the horns blew up in the hall at noon,
Two red roses across the moon.



[The Lady goes round the circle of chairs and joins the Knight. They move forward together on third line and face each other on fourth.]

Lesson 4

THE WHUMMIL BORE



Seven lang years I hac served the King,
Fa fa fa fa lilly :
 And I never got a sight of his daughter but
 ane:
With my glimpy, glimpy, glimpy eedle,
Lillum too tee a ta too a tee a ta a tally.

I saw her thro' a whummil bore,
Fa fa fa fa lilly :
 And I ne'er got a sight of her no more.
With my glimpy, glimpy, glimpy eedle,
Lillum too tee a ta too a tee a ta a tally.

Twa was putting on her gown,
Fa fa fa fa lilly :
 And ten was putting pins therein.
With my glimpy, glimpy, glimpy eedle,
Lillum too tee a ta too a tee a ta a tally.

Twa was putting on her shoon,
Fa fa fa fa lilly :
 And twa was buckling them again.
With my glimpy, glimpy, glimpy eedle,
Lillum too tee a ta too a tee a ta a tally.

Five was combing down her hair,
Fa fa fa fa lilly :
 And I ne'er got a sight of her nae mair.
With my glimpy, glimpy, glimpy eedle,
Lillum too tee a ta too a tee a ta a tally.

Her neck and breast was like the snow,
Fa fa fa fa lilly :
 Then from the bore I was forced to go.
With my glimpy, glimpy, glimpy eedle,
Lillum too tee a ta too a tee a ta a tally.
 Walter de la Mare.

Characters.—THE BOY. THE PRINCESS. TWO for putting on her gown. TEN for putting in pins. TWO for putting on her shoon. TWO for buckling them. FIVE for combing her hair. LORD CHAMBERLAIN.

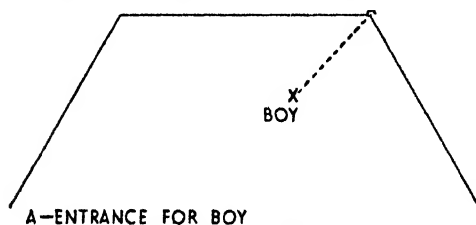
Establish the fact that the "whummil bore" is a keyhole.

This poem needs a choir for the chorus and a solo voice.

Take care that the action falls on the exact word, for example, in "Combing down her hair," the gesture of combing falls on the words "combing" and "hair."

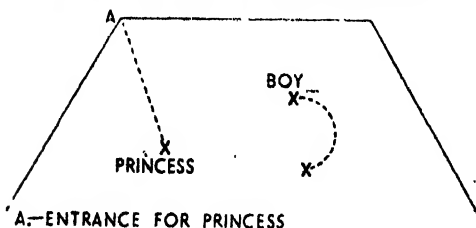
Seven lang years I hac served the King,
Fa fa fa fa lilly :
 And I never got a sight of his daughter but

With my glimpy, glimpy, glimpy eedle,
Lillum too tee a ta too a tee a ta a tally.



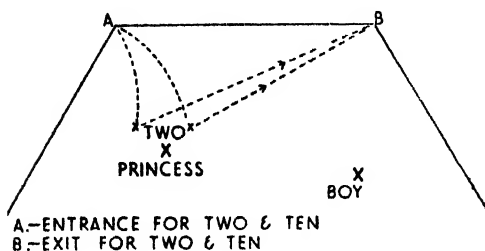
[Enter Boy. On "seven" hold up seven fingers. Hold up one finger on "ane." Arrange a little circular step to fit the last two lines.]

I saw her thro' a whummil bore,
Fa fa fa fa lilly :
 And I ne'er got a sight of her no more.
With my glimpy, glimpy, glimpy eedle,
Lillum too tee a ta too a tee a ta a tally.



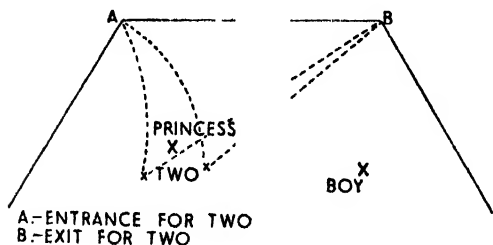
[Boy moves forward and bends to look through keyhole—see picture. During the chorus the Boy does little circular step as before, and the Princess enters.]

Twa was putting on her gown,
Fa fa fa fa lilly :
 And ten was putting pins therein.
With my glimpy, glimpy, glimpy eedle,
Lillum too tee a ta too a tee a ta a tally.



[Boy peeps through keyhole until the end of poem, but repeats the circular step on each chorus. Two enter and put on gown. Go out. The Ten come in pairs from the same entrance. They put in the pins and go out.]

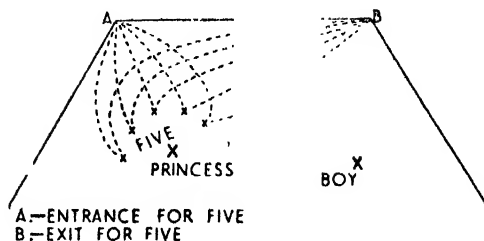
Twa was putting on her shoon,
Fa fa fa fa lilly :
 And twa was buckling them again.
With my glimpy, glimpy, glimpy eedle,
Lillum too tec a ta too a tee a ta a tally.



[Princess sits. Two enter. Put on shoes. Go out. Two enter, buckle shoes, go out]

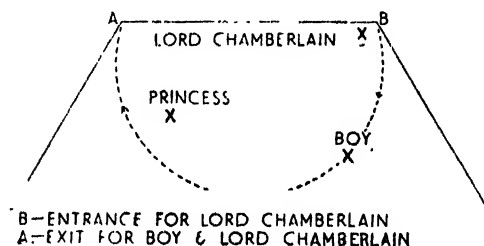
Five was combing down her hair,
Fa fa fa fa lilly :
 And I ne'er got a sight of her nae mair.
With my glimpy, glimpy, glimpy eedle,
Lillum too tee a ta too a tee a ta a tally.

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[Five enter, comb hair, and exit on chorus lines.]

Her neck and breast was like the snow,
Fa fa fa fa lilly :
 Then from the bore I was forced to go.
With my glimpy, glimpy, glimpy eedle,
Lillum too tee a ta too a tee a ta a tally.



[Princess looks at herself in mirror. On "Then from the bore," Lord Chamberlain enters, looks at Boy in horror, takes him by left ear with left hand and exits spanking him with right. Princess yawns and exits.]

Lesson 5

A mime story can be original and it often develops from an occupational mime performed in small groups. On the other hand, a written story can be used for the basis. A good story is an adaptation from that of *The Princess and the Pea* by Hans Andersen.

THE PRINCESS AND THE PEA

Once upon a time there was a prince, and he wanted a princess; but she would have to be a *real* princess. He travelled all round the world to find one, but always there was something wrong. There were princesses

enough, but he found it difficult to decide whether they were *real* ones. There was always something about them that was not quite right. So he came home again and was very sad, for he would have liked very much to have had a real princess.

One evening a terrible storm came on; it thundered and lightened, and the rain poured down in torrents. It was really dreadful! Suddenly a knocking was heard at the castle door, and the old king himself went to open it.

It was a princess standing out there before his door. But, good gracious, what a sight he was after all the rain and dreadful weather! The water ran down from her hair and her clothes; it ran down into the toes of her shoes and out again at the heels. And yet she said she was a real princess.

"Yes, we'll soon find that out," thought the old queen when she was introduced. But she did nothing, went into the bedroom, took all the bedding off the bedstead, and laid a pea at the bottom; then she took seven mattresses and laid them on the pea, and then seven eiderdown beds on top of the mattresses.

On this the princess was to lie all night. The morning, she was asked how she had slept.

"Oh, terribly badly!" said the princess. "I have scarcely shut my eyes the whole night. Heaven only knows what was in the bed, but I was lying on something so hard that I am black and blue all over my body. It is really terrible!"

Now they knew that she was a real princess, because she had felt the pea right through the seven mattresses and seven eiderdown beds. Nobody but a real princess could be as that.

So the prince took her for his wife, for now he knew he had a real princess; and the pea was put in the Art Museum, where it may be seen, if no one has stolen it.

Notes.—Read the story and let the children suggest the characters which are to appear in the mime and the episodes. It is better to use one scene throughout and to keep the action continuous.

On this mime by dividing it into small incidents and letting all the children take part in them.

The following mime was worked out from the story and it was performed to music:

The king and queen are seated on a throne, centre back. The prince mimes that he is going to seek a princess. (*Princess* is indicated by a hand gesture round the face, and two hands beginning on the forehead and running round the head for a *coronet*.)

The prince takes leave of the king and queen and gallops once round the stage space, searching eagerly. The second time round he begins to look disappointed. He breaks off dejectedly in the middle of the third time round and returns to his parents.

The princess runs through the storm (thunder is needed), and knocks at the door of the palace. The king admits her and she is presented to the queen. She mimes that she is a princess (*coronet*) and is lost. The king hands her wine and a plate of food, whilst the queen departs down-stage to make the bed. On the bed she places seven mattresses, seven eiderdowns and a pillow—having first placed beneath them all the pea, after holding it up. (The bed can be a table or three chairs.)

The queen returns to the king and the prince, and they withdraw to bed.

An attendant shows the princess the bed, and she gets into it. She tosses and turns as the clock strikes the hours 1, 2, 3, 4, 5, 6, 7, and 8, at short intervals.

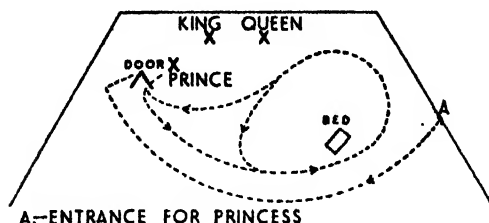
The king, queen and prince and princess all meet in the morning, and the queen asks how the princess slept. (Hands clasped together and placed beneath the cheek, as though asleep.)

The princess says she had a horrid night by holding up hands in horror and indicating that her back is black and blue. They are all delighted. The queen leads the way to the bed, removes the pea. It is handed triumphantly to the page.

The prince and princess follow the king and queen out with wedding bells pealing.

and behind them is a page with the pea on a cushion.

As many ladies as wished can be introduced to attend the queen.



Lesson 6

THE REMARKABLE ROCKET

The King's son was going to be married, so there were general rejoicings. He had waited a whole year for his bride, and at last she had arrived. She was a Russian Princess, and had driven all the way from Finland in a sledge drawn by six reindeer. The sledge was shaped like a great golden swan, and between the swan's wings lay the little Princess herself. Her long ermine cloak reached right down to her feet, on her head was a tiny cap of silver tissue, and she was as pale as the Snow Palace in which she had always lived. So pale was she that as she drove through the streets all the people wondered. "She is like a white rose!" they cried, and they threw down flowers on her from the balconies.

At the gate of the Castle the Prince was waiting to receive her. He had dreamy violet eyes, and his hair was like fine gold. When he saw her he sank upon one knee, and kissed her hand.

"Your picture was beautiful," he murmured, "but you are more beautiful than your picture," and the little Princess blushed.

"She was like a white rose before," said a young page to his neighbour, "but she is like a red rose now;" and the whole Court was delighted.

For the next three days everybody went about saying, "White rose, Red rose, Red

rose, White rose" and the King gave orders that the Page's salary was to be doubled. As he received no salary at all this was not of much use to him, but it was considered a great honour, and was duly published in the Court Gazette.

When the three days were over the marriage was celebrated. It was a magnificent ceremony, and the bride and bridegroom walked hand in hand under a canopy of purple velvet embroidered with little pearls. Then there was a State Banquet, which lasted for five hours. The Prince and Princess sat at the top of the Great Hall and drank out of a cup of clear crystal. Only true lovers could drink out of this cup, for if false lips touched it, it grew grey and dull and cloudy.

"It is quite clear that they love each other," said the little Page, "as clear as crystal!" and the King doubled his salary a second time.

"What an honour!" cried all the courtiers.

After the banquet there was to be a Ball. The bride and bridegroom were to dance the Rose-dance together, and the King had promised to play the flute. He played very badly, but no one had ever dared to tell him so, because he was the King. Indeed, he knew only two airs, and was never quite certain which one he was playing; but it made no matter, for, whatever he did, everybody cried out, "Charming! charming!"

The last item on the programme was a grand display of fireworks, to be let off exactly at midnight. The little Princess had never seen a firework in her life, so the King had given orders that the Royal Pyrotechnist should be in attendance on the day of her marriage.

"What are fireworks like?" she had asked the Prince, one morning, as she was walking on the terrace.

"They are like the Aurora Borealis," said the King, who always answered questions that were addressed to other people, "only much more natural. I prefer them to stars myself, as you always know when they are going to appear, and they are as delightful

as my own flute-playing. You must certainly see them."

So at the end of the King's garden a great stand had been set up, and as soon as the Royal Pyrotechnist had put everything in its proper place, the fireworks began to talk to each other.

"The world is certainly very beautiful," cried a little Squib. "Just look at those yellow tulips. Why! if they were real crackers they could not be lovelier. I am very glad I have travelled. Travel improves the mind wonderfully, and does away with all one's prejudices."

"The King's garden is not the world, you foolish Squib," said a big Roman Candle; "the world is an enormous place, and it would take you three days to see it thoroughly."

"Any place you love is the world to you," exclaimed the pensive Catherine Wheel, who had been attached to an old deal box in early life, and prided herself on her broken heart; "but love is not fashionable any more, the poets have killed it. They wrote so much about it that nobody believed them, and I am not surprised. True love suffers, and is silent. I remember myself once—But no matter now. Romance is a thing of the past."

"Nonsense!" said the Roman Candle, "Romance never dies. It is like the moon, and lives for ever. The bride and bridegroom, for instance, love each other very dearly. I heard all about them this morning from a brown-paper cartridge, who happened to be staying in the same drawer as myself, and he knew the latest Court news."

But the Catherine Wheel shook her head. "Romance is dead, Romance is dead, Romance is dead," she murmured. She was one of those people who think that, if you say the same thing over and over a great many times, it becomes true in the end.

Suddenly, a sharp, dry cough was heard, and they all looked round.

It came from a tall, supercilious-looking Rocket, who was tied to the end of a long stick. He always coughed before he made

any observations, so as to attract attention.

"Ahem! ahem!" he said, and everybody listened except the poor Catherine Wheel, who was still shaking her head, and murmuring, "Romance is dead."

"Order! order!" cried out a Cracker. He was something of a politician, and had always taken a prominent part in the local elections, so he knew the proper Parliamentary expressions to use.

"Quite dead," whispered the Catherine Wheel, and she went off to sleep.

As soon as there was perfect silence, the Rocket coughed a third time and began. He spoke with a very slow, distinct voice, as if he were dictating his memoirs, and always looked over the shoulder of the person to whom he was talking. In fact, he had a most distinguished manner.

"How fortunate it is for the King's son," he remarked, "that he is to be married on the very day on which I am to be let off! Really, if it had not been arranged beforehand, it could not have turned out better for him; but Princes are always lucky."

"Dear me!" said the little Squib, "I thought it was quite the other way, and that we were to be let off in the Prince's honour."

"It may be so with you," he answered; "indeed I have no doubt that it is, but with me it is different. I am a very remarkable Rocket, and come of remarkable parents. My mother was the most celebrated Catherine Wheel of her day, and was renowned for her graceful dancing. When she made her great public appearance she spun round nineteen times before she went out, and each time that she did so she threw into the air seven pink stars. She was three feet and a half in diameter, and made of the very best gunpowder. My father was a Rocket like myself, and of French extraction. He flew so high that the people were afraid that he would never come down again. He did, though, for he was of a kindly disposition, and he made a most brilliant descent in a shower of golden rain. The

newspapers wrote about his performance in very flattering terms. Indeed, the Court Gazette called him a triumph of Pyrotechnic art."

"Pyrotechnic, Pyrotechnic, you mean," said a Bengal Light; "I know it is Pyrotechnic, for I saw it written on my own canister."

"Well, I said Pylotechnic," answered the Rocket, in a severe tone of voice, and the Bengal Light felt so crushed that he began at once to bully the little squibs, in order to show that he was still a person of some importance.

"I was saying," continued the Rocket, "I was saying—What was I saying?"

"You were talking about yourself," replied the Roman Candle.

"Of course; I knew I was discussing some interesting subject when I was so rudely interrupted. I hate rudeness and bad manners of every kind, for I am extremely sensitive. No one in the whole world is so sensitive as I am, I am quite sure of that."

"What is a sensitive person?" said the Cracker to the Roman Candle.

"A person who, because he has corns himself, always treads on other people's toes," answered the Roman Candle in a low whisper; and the Cracker nearly exploded with laughter.

"Pray, what are you laughing at?" inquired the Rocket; "I am not laughing."

"I am laughing because I am happy," replied the Cracker.

"That is a very selfish reason," said the Rocket angrily. "What right have you to be happy? You should be thinking about others. In fact, you should be thinking about me. I am always thinking about myself, and I expect everybody else to do the same. That is what is called sympathy. It is a beautiful virtue, and I possess it in a high degree. Suppose, for instance, anything happened to me to-night, what a misfortune that would be for every one! The Prince and Princess would never be happy again, their whole married life would

be spoiled; and as for the King, I know he would not get over it. Really, when I begin to reflect on the importance of my position, I am almost moved to tears."

"If you want to give pleasure to others," cried the Roman Candle, "you had better keep yourself dry."

"Certainly," exclaimed the Bengal Light, who was now in better spirits; "that is only common sense."

"Common sense, indeed!" said the Rocket indignantly; "you forget that I am very uncommon, and very remarkable. Why, anybody can have common sense, provided that they have no imagination. But I have imagination, for I never think of things as they really are; I always think of them as being quite different. As for keeping myself dry, there is evidently no one here who can at all appreciate an emotional nature. Fortunately for myself, I don't care. The only thing that sustains one through life is the consciousness of the immense inferiority of everybody else, and this is a feeling I have always cultivated. But none of you have any hearts. Here you are laughing and making merry just as if the Prince and Princess had not just been married."

"Well, really," exclaimed a small Fire-balloon, "why not? It is a most joyful occasion, and when I soar up into the air I intend to tell the stars all about it. You will see them twinkle when I talk to them about the pretty bride."

"Ah! what a trivial view of life!" said the Rocket; "but it is only what I expected. There is nothing in you; you are hollow and empty. Why, perhaps the Prince and Princess may go to live in a country where there is a deep river, and perhaps they may have one only son, a little fair-haired boy with violet eyes like the Prince himself; and perhaps some day he may go out to walk with his nurse; and perhaps the nurse may go to sleep under a great elder-tree; and perhaps the little boy may fall into the deep river and be drowned. What a terrible misfortune! Poor people, to lose their only

son! It is really too dreadful! I shall never get over it."

"But they have not lost their only son," said the Roman Candle; "no misfortune has happened to them at all."

"I never said that they had," replied the Rocket; "I said that they might. If they had lost their only son there would be no use in saying any more about the matter. I hate people who cry over spilt milk. But when I think that they might lose their only son, I certainly am very much affected."

"You certainly are!" cried the Bengal Light. "In fact, you are the most affected person I ever met."

"You are the rudest person I ever met," said the Rocket, "and you cannot understand my friendship for the Prince."

"Why, you don't even know him," growled the Roman Candle.

"I never said I knew him," answered the Rocket. "I dare say that if I knew him I should not be his friend at all. It is a very dangerous thing to know one's friends."

"You had really better keep yourself dry," said the Fire-balloon. "That is the important thing."

"Very important for you, I have no doubt," answered the Rocket, "but I shall weep if I choose;" and he actually burst into real tears, which flowed down his stick like rain-drops, and nearly drowned two little beetles, who were just thinking of setting up house together, and were looking for a nice dry spot to live in.

"He must have a truly romantic nature," said the Catherine Wheel, "for he weeps when there is nothing at all to weep about;" and she heaved a deep sigh and thought about the deal box.

But the Roman Candle and the Bengal Light were quite indignant, and kept saying, "Humbug! humbug!" at the top of their voices. They were extremely practical, and whenever they objected to anything they called it humbug.

Then the moon rose like a wonderful silver shield; and the stars began to shine, and a sound of music came from the palace.

The Prince and Princess were leading the dance. They danced so beautifully that the tall white lilies peeped in at the window and watched them, and the great red poppies nodded their heads and beat time.

Then ten o'clock struck, and then eleven, and then twelve, and at the last stroke of midnight every one came out on the terrace, and the King sent for the Royal Pyrotechnist.

"Let the fireworks begin," said the King; and the Royal Pyrotechnist made a low bow, and marched down to the end of the garden. He had six attendants with him, each of whom carried a lighted torch at the end of a long pole.

It was certainly a magnificent display.

Whizz! Whizz! went the Catherine Wheel, as she spun round and round. Boom! Boom! went the Roman Candle. Then the Squibs danced all over the place, and the Bengal Lights made everything look scarlet. "Good-bye," cried the Fire-balloon, as he soared away, dropping tiny blue sparks. Bang! Bang! answered the Crackers, who were enjoying themselves immensely. Every one was a great success except the Remarkable Rocket. He was so damped with crying that he could not go off at all. The best thing in him was the gunpowder, and that was so wet with tears that it was of no use. All his poor relations, to whom he would never speak, except with a sneer, shot up into the sky like wonderful golden flowers, with blossoms of fire. Huzza! Huzza! cried the Court; and the little Princess laughed with pleasure.

"I suppose they are reserving me for some grand occasion," said the Rocket; "no doubt that is what it means," and he looked more scornful than ever.

The next day the workmen came to put everything tidy. "This is evidently a deputation," said the Rocket; "I will receive them with becoming dignity;" so he put his nose in the air, and began to frown severely, as if he were thinking about some very important subject. But they took no notice of him at all till they were just going away.

Then one of them caught sight of him. "Hallo!" he cried, "what a bad rocket!" and he threw him over the wall into the ditch.

"BAD ROCKET? BAD ROCKET?" he said, as he whirled through the air; "impossible! GRAND ROCKET, that is what the man said. BAD and GRAND sound very much the same, indeed they often are the same;" and he fell into the mud.

"It is not comfortable here," he remarked, "but no doubt it is some fashionable watering-place, and they have sent me away to recruit my health. My nerves are certainly very much shattered, and I require rest."

Then a little Frog, with bright jewelled eyes, and a green mottled coat, swam up to him.

"A new arrival, I see!" said the Frog. "Well, after all there is nothing like mud. Give me rainy weather and a ditch, and I am quite happy. Do you think it will be a wet afternoon? I am sure I hope so, but the sky is quite blue and cloudless. What a pity!"

"Ahem! ahem!" said the Rocket, and he began to cough.

"What a delightful voice you have!" cried the Frog. "Really it is quite like a croak, and croaking is, of course, the most musical sound in the world. You will hear our glee-club this evening. We sit in the old duck-pond close by the farmer's house, and as soon as the moon rises we begin. It is so entrancing that everybody lies awake to listen to us. In fact, it was only yesterday that I heard the farmer's wife say to her mother that she could not get a wink of sleep at night on account of us. It is most gratifying to find oneself so popular!"

"Ahem! ahem!" said the Rocket angrily. He was very much annoyed that he could not get a word in.

"A delightful voice, certainly," continued the Frog; "I hope you will come over to the duck-pond. I am off to look for my daughters. I have six beautiful daughters, and I am so afraid the Pike may meet them. He is a perfect monster, and would have no

hesitation in breakfasting off them. Well, good-bye; I have enjoyed our conversation very much, I assure you."

"Conversation, indeed!" said the Rocket. "You have talked the whole time yourself. That is not conversation."

"Somebody must listen," answered the Frog, "and I like to do all the talking myself. It saves time, and prevents arguments."

"But I like arguments," said the Rocket.

"I hope not," said the Frog complacently. "Arguments are extremely vulgar, for everybody in good society holds exactly the same opinions. Good-bye a second time; I see my daughters in the distance;" and the little Frog swam away.

"You are a very irritating person," said the Rocket, "and very ill-bred. I hate people who talk about themselves, as you do, when one wants to talk about oneself, as I do. It is what I call selfishness, and selfishness is a most detestable thing, especially to any one of my temperament, for I am well known for my sympathetic nature. In fact, you should take example by me; you could not possibly have a better model. Now that you have the chance you had better avail yourself of it, for I am going back to Court almost immediately. I am a great favourite at Court; in fact, the Prince and Princess were married yesterday in my honour. Of course, you know nothing of these matters, for you are a provincial."

"There is no good talking to him," said a Dragon-fly, who was sitting on the top of a large brown bulrush; "no good at all, for he has gone away."

"Well, that is his loss, not mine," answered the Rocket. "I am not going to stop talking to him merely because he pays no attention. I like hearing myself talk. It is one of my greatest pleasures. I often have long conversations all by myself, and I am so clever that sometimes I don't understand a single word of what I am saying."

"Then you should certainly lecture on Philosophy," said the Dragon-fly, and he spread a pair of lovely gauze wings and soared away into the sky.

"How very silly of him not to stay here!" said the Rocket. "I am sure that he has not often got such a chance of improving his mind. However, I don't care a bit. Genius like mine is sure to be appreciated some day;" and he sank down a little deeper into the mud.

After some time a large White Duck swam up to him. She had yellow legs, and webbed feet, and was considered a great beauty on account of her waddle.

"Quack, quack, quack," she said. "What a curious shape you are! May I ask were you born like that, or is it the result of an accident?"

"It is quite evident that you have always lived in the country," answered the Rocket, "otherwise you would know who I am. However, I excuse your ignorance. It would be unfair to expect other people to be as remarkable as oneself. You will no doubt be surprised to hear that I can fly up into the sky, and come down in a shower of golden rain."

"I don't think much of that," said the Duck, "as I cannot see what use it is to any one. Now, if you could plough the fields like the ox, or draw a cart like the horse, or look after the sheep like the collie-dog, that would be something."

"My good creature," cried the Rocket in a very haughty tone of voice, "I see that you belong to the lower orders. A person of my position is never useful. We have certain accomplishments, and that is more than sufficient. I have no sympathy myself with industry of any kind, least of all with such industries as you seem to recommend. Indeed, I have always been of opinion that hard work is simply the refuge of people who have nothing whatever to do."

"Well, well," said the Duck, who was of a very peaceful disposition, and never quarrelled with any one, "everybody has different tastes. I hope, at any rate, that you are going to take up your residence here."

"Oh! dear no," cried the Rocket. "I am merely a visitor, a distinguished visitor. The fact is that I find this place rather tedious.

There is neither society here nor solitude. In fact, it is essentially suburban. I shall probably go back to Court, for I know that I am destined to make a sensation in the world."

"I had thoughts of entering public life once myself," remarked the Duck; "there are so many things that need reforming. Indeed, I took the chair at a meeting some time ago, and we passed resolutions condemning everything that we did not like. However, they did not seem to have much effect. Now I go in for domesticity, and look after my family."

"I am made for public life," said the Rocket, "and so are all my relations, even the humblest of them. Whenever we appear we excite great attention. I have not actually appeared myself, but when I do so it will be a magnificent sight. As for domesticity, it ages one rapidly, and distracts one's mind from higher things."

"Ah! the higher things of life, how fine they are!" said the Duck; "and that reminds me how hungry I feel": and she swam away down the stream, saying, "Quack, quack, quack."

"Come back! come back!" screamed the Rocket, "I have a great deal to say to you;" but the Duck paid no attention to him. "I am glad that she has gone," he said to himself, "she has a decidedly middle-class mind;" and he sank a little deeper still into the mud, and began to think about the loneliness of genius, when suddenly two little boys in white smocks came running down the bank with a kettle and some faggots.

"This must be the deputation," said the Rocket, and he tried to look very dignified.

"Hallo!" cried one of the boys, "look at this old stick; I wonder how it came here;" and he picked the rocket out of the ditch.

"OLD STICK!" said the Rocket, "impossible! GOLD STICK, that is what he said. Gold Stick is very complimentary. In fact, he mistakes me for one of the Court dignitaries!"

"Let us put it into the fire!" said the other boy, "it will help to boil the kettle."

So they piled the faggots together, and put the Rocket on top, and lit the fire.

"This is magnificent," cried the Rocket, "they are going to let me off in broad daylight, so that every one can see me."

"We will go to sleep now," they said, "and when we wake up the kettle will be boiled;" and they lay down on the grass, and shut their eyes.

The Rocket was very damp, so he took a long time to burn. At last, however, the fire caught him.

"Now I am going off!" he cried, and he made himself very still and straight. "I know I shall go much higher than the stars, much higher than the moon, much higher than the sun. In fact, I shall go so high that —"

Fizz! Fizz! Fizz! and he went straight up into the air.

"Delightful!" he cried, "I shall go on like this for ever. What a success I am!"

But nobody saw him.

Then he began to feel a curious tingling sensation all over him.

"Now I am going to explode," he cried. "I shall set the whole world on fire, and make such a noise that nobody will talk about anything else for a whole year." And he certainly did explode. Bang! Bang! Bang! went the gunpowder. There was no doubt about it.

But nobody heard him, not even the two little boys, for they were sound asleep.

Then all that was left of him was the stick, and this fell down on the back of a Goose who was taking a walk by the side of the ditch.

"Good heavens!" cried the Goose. "It is going to rain sticks;" and she rushed into the water.

"I knew I should create a great sensation," gasped the Rocket, and he went out.

Oscar Wilde

Notes.—This is fun, because much of the preparatory work is in miming fireworks. A great deal of the story has to be omitted.

The prince and a huge crowd await the arrival of the princess. She arrives and is

greatly admired. She is led to the king who calls for the Royal Pyrotechnist. Until he comes, the king plays on his flute and everyone suffers.

The Royal Pyrotechnist arrives and the king then orders a firework display.

The Royal Pyrotechnist gathers fireworks and arranges them. They are played by children. They are:

- 6 little squibs.
- 1 Catherine wheel.
- 1 Roman candle.
- 6 crackers.
- 1 rocket.
- 1 Bengal light.
- 1 fire-balloon.

The children can be labelled, and instead of speaking they move about in character, as if they were having a conversation.

Music is heard as the court takes its place. The Royal Pyrotechnist has an assistant who lets off all the fireworks. The rocket won't go off, so it is thrown into a corner. The Catherine wheel has a sleeve with several colours hanging from it, so that she can move her arm swiftly in a circular movement. Crackers hop violently. Squibs streak off all over the place. The Roman candle has a small circular arm movement and a sudden upward arm movement, with colour attached to the sleeve. The fire-balloon should swell up slowly and rise up quietly. The Bengal light should be steady and continuous.

The children will probably have marked ideas about the movements suitable for their fireworks. When their time is over, they collapse on the ground.

The court withdraws, after applause.

Two workmen come and clear away the remnants of the fireworks. They look at the rocket and then toss him away into a corner.

A frog leaps up and a dragon-fly flies up. They are friendly to the rocket, who refuses to have anything to do with them.

A duck waddles up to the rocket, who turns his back and ignores her friendly advances.

Lastly, two little boys come along. They make a fire and boil a kettle for tea. They think the rocket is an old stick and toss him into the fire. Then they go to sleep. As the rocket gets hotter, he becomes bigger and bigger and more and more excited, until he darts off at a great speed. (A momentary black-out is useful here.)

The stick hits a passing goose, who runs off very much frightened, but the stick falls off-stage and the goose only wakens the two boys by her noise.

"Free" mime.—There are two distinct types of mime: the *formal* type which is actually speech-gesture, in that the movements used have been stylised to represent actual words; i.e., "lady" shown by the circling of the face by the hand, "money" shown by the movement of pouring coins from one hand to the other, etc.; and "*free*" mime in which the movement is not conventionalised to represent definite words, but tries to convey the quality, the character and at the same time the salient physical features of the action mimed. The "free" mime is the type that is especially valuable in the school.

In "free" mime, the aim is not at making a movement to *look like* the action which it

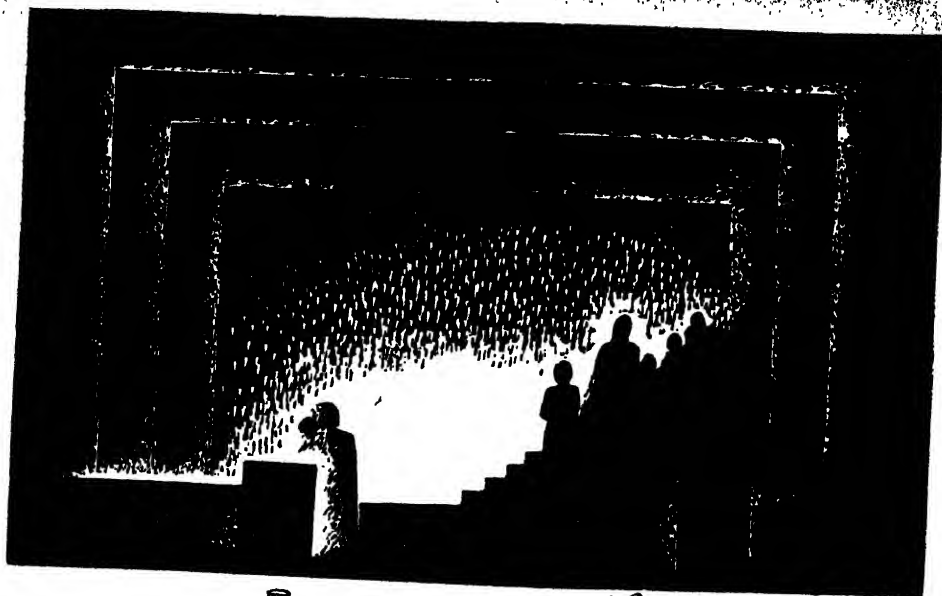
represents; it must not be merely a faithful copy but a *re-creation*. For instance, if the small practical action of opening a door is being mimed, the reproduction of the motion of the door-opening is insufficient; the mime must convey both the impetus that causes the motion and the material resistance that is overcome by the motion; it must give to the onlooker the *sensation* of a door being opened, as well as the purely visual image of the gesture. The movement, however, must be true in a detailed as well as in a general sense; it must never degenerate into a mere dumb-crambo, but must be vivid, exact, and full of character. If a tree is being mimed, a good mime is not achieved by standing to look like a tree, but only by trying to *feel* like a tree, realising the unseen roots within the earth, the harsh bark, the wind that has gradually warped its shape, and so on, until by feeling "tree" some semblance of "tree" is inevitably reached, its truthfulness varying according to (1) the imaginative strength of the mimer and (2) the degree in which the body is able to respond to the mind.

Such training in co-operation of mind with body as Dalcroze Eurhythmics gives is the best possible preparation, and the teacher of mime should make every effort to gain some personal experience of this type of work and so be able to use it with the children.

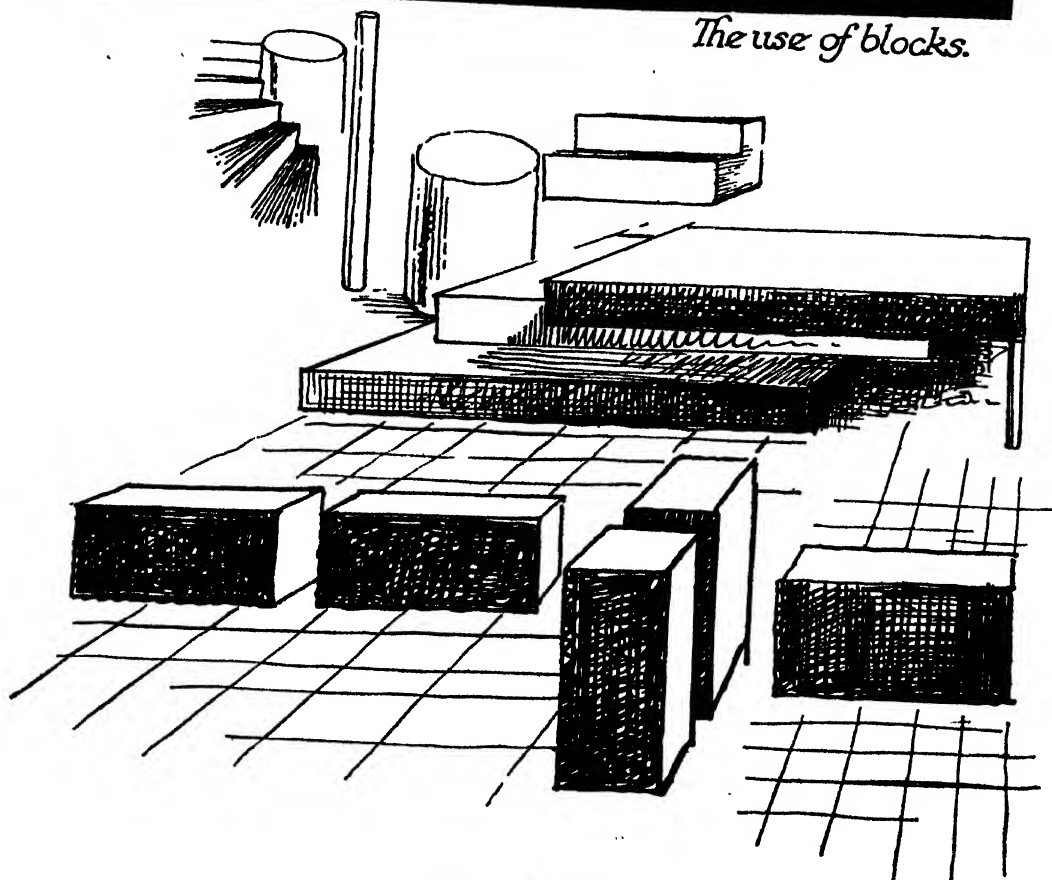


SPEAK PLAIN AND TO THE PURPOSE

SECTION FOUR—THE TEACHING OF DRAMA



The use of blocks.



PLATFORM UNITS

GENERAL NOTES ON STAGE EQUIPMENT

Sets for plays.—There are certain stage accessories which may be acquired by any school. A store of them can be built up and continually added to as funds permit. Three main types are suggested.

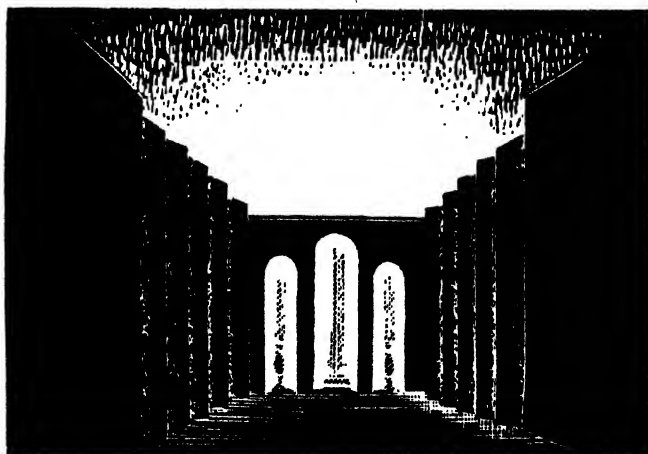
The first is the platform unit. A number of these units, of varying shapes and sizes which can be built up to form steps, massive blocks or raised platforms of almost any shape and size, is the ideal to aim for. From a set of such units many varied and interesting structures can be made, giving architectural rhythm, dramatic significance, atmosphere, and variety (through the changing levels on which the actors move) to a setting. Even a few of these platform units are better than none at all, and in any case it is not likely that more than a few can be used in a classroom. But these few will be found invaluable there. Failing specially made units, ordinary classroom platforms will serve the purpose, if rather less effectively. By giving two or more levels for the actors to move on, these platforms add pictorial interest to grouping and movement, increase the power of expressing dramatic significance and give a focal point to the setting.

The second item suggested is the screen. The ordinary folding screen is invaluable for classroom work. It should be covered with neutral-coloured hessian, or some other cheap but durable material, and it can be used in a variety of ways. Several screens together make an effective background in the classroom: the play of light and shade formed by the folds of the screen gives interest, and, at the same time, the regular repetition of the design thus formed, coupled with the neutral colour, ensures that the screens remain as background while still helping to achieve unity. The screens can be parted to form entrances and exits, and the flat surfaces may be decorated, if this is considered desirable,

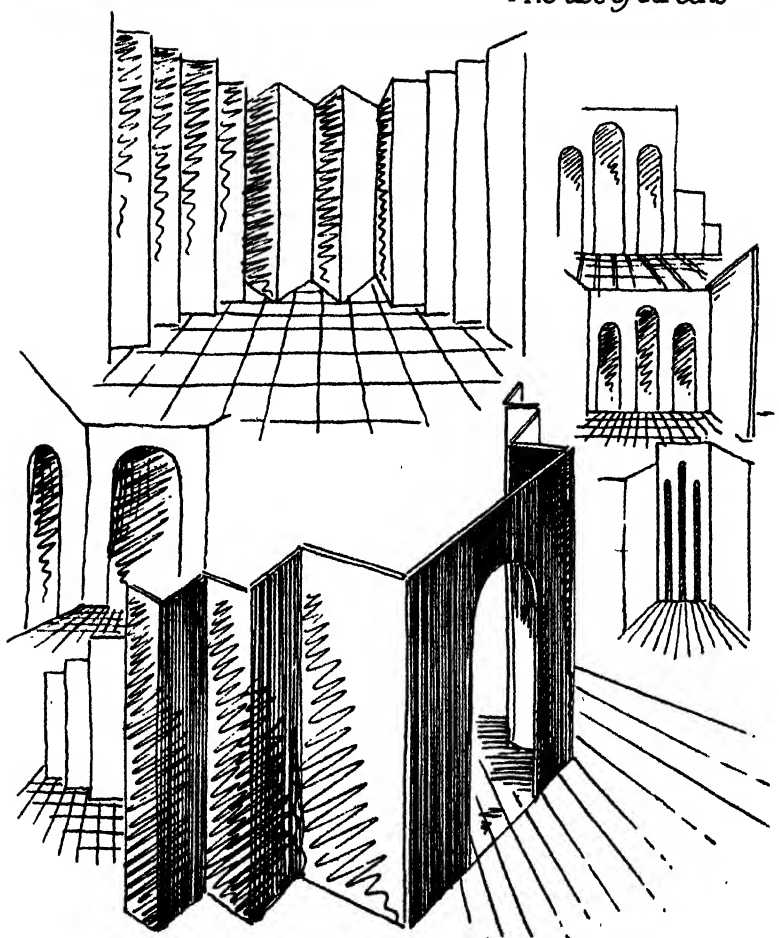
by pinning painted paper on them. If productions are being done on a real stage, greater elaboration of the screen system may be attempted, involving a series of screens of varying sizes planned to fit together to form one unit, or to be used in small groups. Examples of stage settings formed from these screens are illustrated. Almost any kind of scene can be suggested by a carefully planned set of such screens. With careful lighting they can assume a massive architectural quality, as in a production of "Brother" from the *Little Plays of St. Francis* by Laurence Housman, in which a convincingly monastic effect was achieved by lighting with hurricane lamps only.

Long drapes—if such things are possible—form the third recommended form of stage equipment. They can be used in conjunction with both screens and blocks, and should be draped in such a way as to give pictorial rhythm, space illusion, or dramatic force to a setting. Some examples are illustrated. In order to be used in this way they should be long—long enough to go with ease from one top corner of the stage to the other bottom corner. They can then be hung, draped or looped in a variety of ways. The material should be moderately heavy—hessian is recommended. As to colour, light and dark tones of fairly neutral colours will be found the most practical.

It is not essential for the effective use of any of these forms of "scenery" to have a proper stage with a proscenium opening forming a frame for the stage picture, but such a possession obviously gives a school increased scope for dramatic work. Where one is available, it should be as well equipped with curtains and lighting as funds permit. In addition to the front draw curtains, there should be wing curtains at the side and curtains across the back. Ideally, they should



The use of screens



SCREENS



Ropes take the place of drapes



A draped set, with ground rows.

be double-sided, one side black and the other a neutral grey or brown. If it is possible to have only one-sided curtains, black should be avoided: for the right play black is superbly effective, but it is not so universally suitable as a light neutral colour. Velvet is by far the best material and also the most expensive. Velour is excellent and there are, too, many suitable cloths on the market, such as various wool serges, Bolton sheeting and casement cloth. But once again, hessian will be found both cheap and satisfactory. When choosing a cloth the main things to look for are:

1. Weight, so that they will not blow about.
2. A fairly matt texture.
3. Toughness.
4. Pleasant folds when hanging.
5. Opacity to light.

It should be mentioned here that the hanging facilities for curtains are quite as important as the curtains themselves: they are subjected to considerable strain and must be solidly made. It is recommended that the advice of a firm specialising in stage work should be sought when arranging for drapes.

Furnishing the set.—When furnishing a set it must be borne in mind that the stage is literally a pictorial composition. Furniture should be so placed as to give a balanced composition—which does not necessarily mean a symmetrical one. Such furniture as is used should be simple, but attractive to the eye, as well as functional. The lines of sight of the audience must never be forgotten when placing furniture, entrances and exits: all must have a clear view of the greater part of the stage and of every point where important action takes place.

Stage lighting.—In the classroom, lighting must often be either daylight or just the normal classroom lighting, but it will greatly add to the interest if the normal lighting can be amplified by fitting some extra bulbs

(with reflectors if possible, even if only home-made from bits of sheet metal) above and at the sides of the stage. The light must be screened from the audience; otherwise the glare is irritating. Sufficient lamps should be fitted, if they can be got and provided with sockets and flex, to ensure that there is enough light on the actors' faces for their expressions to be clearly visible. This is the first rule of stage lighting. It may be relaxed only for short periods, when some other effect of atmosphere is considered more important for the moment.

Footlights are perhaps rather more a matter of tradition than of usefulness, but they serve to "kill" shadows made on the back wall and on the actors' faces from overhead lighting, and are useful for throwing grotesque or eerie shadows. They act as a barrier between audience and actor, and may in some cases prevent self-consciousness by making the audience invisible to the actors provided the hall is dark.

Movable lamps with reflectors and, if possible, slots for coloured gelatine slides to fit on to the reflectors, and plenty of flex, or rubber-covered cable if the lamps are to be used a lot, will be found invaluable for concentrating light on parts of the acting area where it is particularly required, and for off-stage lighting effects, for example, a sunrise silhouetting a rocky hill formed by a jagged pile of platform units.

If it is possible to get extra lighting equipment installed for a school stage, the best yield for a modest outlay would be got from such movable lights in the form of three or four 500 watt (1000 watt for big stages) floods. Ideally, each should be on an independent switch and dimmer, with a master switch and dimmer in addition. The floods can be used to give extra light where it is required in the acting area, to counteract flatness in the lighting and thus give solidity to actors and setting, to create effects of light and shadow by shining in from the side of the stage or at the back. It is recommended that any installation should be carried out by a firm of stage electrical

engineers. Their advice will be helpful and their equipment can be used with safety.

Properties and costumes.—Although the standard of a finished production depends partly on the quality of costumes and setting, excellent work can be done in the classroom with very simple properties and improvised costumes and settings.

A good stock of properties is invaluable. They can be made from a variety of materials, preferably of a durable nature, so that they can be used again and again. The child is able to help in the making of these "props," and will often give exciting and effective suggestions. A store of scraps is easily built up—nothing should be rejected. A large junk cupboard more than repays its storage room. Ironmonger's odds and ends provide unlimited opportunities for ingenious conversion. For example, copper wire and trefoil picture hangers together with twisted brass wire make an effective, durable and sumptuous crown. The effect can be further enriched by adding small pieces of mirror glass as jewels. Odd strips of American cloth make spectacular belts, and they can be painted or have bits of other coloured material glued on to them. Swords can be made from a variety of things—plywood, suitable sticks, and so on. Bottles, especially of unusual shape, and all kinds of drinking vessels are useful. Many things can be made from papier mâché, or ordinary household articles can be transformed or decorated with it, or with plasticine. Gold, silver and other bright paints are useful in making such props.

Access to these properties will give children endless delight, and the use of them will fire their fertile imaginations to such an extent that further costume will often be superfluous. They should be available to the children at any time: such things lose much value if they are kept for special occasions only.

With regard to costume, much can be done when the child has access to hampers of ordinary clothing, but the nature of such costumes will sooner or later be found to be a restriction on the imagination rather than

an aid to it. It is better, therefore, to find some simple form of basic costume which is easily laundered, cheap to make and quickly adapted by the children. A number of garments in three basic patterns will offer endless possibilities of combinations and methods of wearing. They should be made in a variety of colours, so as to include a proportion of light, dark and neutral, together with a number of clear, intense ones in as wide a range as possible. Where funds are limited, such things as old curtains and bedspreads can be used.

The three patterns suggested are:

1. The sheet shape. This is perhaps the most valuable of all. Some of the uses to which it may be put are: classical costumes such as the chiton and toga; cloaks, especially useful for boys; Arab and Eastern costumes; medieval "draped" trousers; skirts. When folded over a tape which is then tied round the waist, the sheet shape makes an effective double skirt.

2. The simple knee-length tunic, short-sleeved, Magyar pattern. Variations on this have been used by peasants in all countries throughout many centuries. The medieval country labourer is therefore easily suggested, but the tunic can also become an effective and graceful dancing dress. By carefully gathering the sleeves on to the shoulders, and the use of ribbons, a classical dancing dress can be achieved. Worn over a skirt formed by a sheet, and with the addition of a cloak with jewelled girdle and painted borders, it becomes an effective and even sumptuous medieval gown.

3. A loose, three-quarter length "coat," once again cut in the Magyar style. This can be worn by itself or in conjunction with other garments, and it is easily adapted for many purposes.

If these garments are soundly made of some cheap and colourful material, and children can have access to them at any time, as with the properties, they will prove invaluable. Quite elaborate productions may be staged with them. It is possible to paint them with poster paint, which is easily



THE SHEET • & MAGYAR TUNIC •



ADAPTATION - MEDIEVAL GOWN FROM "BASIC" GARMENTS



Period

or Eastern

MAGYAR COAT

removed by laundering, so that another design may then be painted on. When material and money permit, a few simple striped garments among the plain will greatly add to the effectiveness of grouping.

Stockings, even old ones, can be of great value in the completion of a costume. They can be washed, bleached, and then dyed in bright colours and used in various ways. Rolled down to the ankle, for example, and with the foot padded to the correct shape they can become effective medieval shoes.

Head-dresses are most important and at the same time most difficult to engineer. Wigs, especially, tend to be evaded, but here are two suggestions for making passable ones. Firstly, rug wool sewn on to a skull-cap is effective for bizarre or comic characters. Secondly, an effect of braided plaits can be obtained by putting long strips of cloth over the head, slightly gathering them for the parting and then binding them with braids. This is useful for some medieval styles.

In creating costumes the silhouette of the figure must always be kept in mind and clear-cut effects aimed at, such as a stiff and formal line or a soft and flowing one, a slim clinging cut or a puffed-out one. These are the things which most quickly suggest period. For coloured borders, patterns and stripes, the paint brush will probably be the most useful tool. There is unlikely to be either time or money available for hand embroidery, and even if there is, the effect is generally disappointing on the stage, where boldness is essential. Patterns and decoration of all kinds are quickly and effectively painted on to almost any material. Most will take poster paint successfully and those which will not can probably be painted with oils, provided it is not required to wash the design out afterwards. Costumes painted with poster paint may in some cases need redyeing after laundering to obliterate the effects completely.

The care of these costumes will present a problem, but it is important. They must be laundered and cleaned properly, not only from the hygienic point of view, but also to prolong their life as long as possible. They

must be aired after washing and then stored in clean, dry cupboards protected with anti-moth spray. They should hang where possible. Folded garments and accessories should be carefully packed, and the drawers and boxes labelled. A periodic inspection will guard against serious damage by moths or damp. All costumes should be inspected, cleaned, pressed and mended after use, and it should be made the child's responsibility to do this, as far as possible.

Programmes and posters.—Poster work by the children themselves can be used to advertise any play they are presenting. The art of the child at this age is naturally of a symbolic nature, and by reason of its direct and vital quality, purposeful line, and balance of form and colour, lends itself admirably to poster making. Valuable work can be done with the lettering and this can then be applied further to the production of programmes. The simple form of sans-serif lettering produced by the "ball" pen is infinitely preferable to the lettering done by an unskilled person with a square-cut lettering nib. Ornate lettering in poor taste is one of the greatest stumbling blocks of the amateur artist.

One of the most effective media will be torn or cut paper work. Here the child has direct contact with the material, comparable with that obtained when working in a plastic medium, and in consequence the appreciation of form is most keen and the results obtained are bold and effective. When supervising this work, however, it must be remembered that art at this age is primarily a means of expression, and attempts at formal teaching must be avoided. Montage is an effective method of producing posters and programmes. In this work, the better portions of a number of illustrations are taken and cut out, either in silhouette or in a nebulous shape, to include some of the background. They are then rearranged, possibly with a small amount of lettering, into a homogeneous whole. Most interesting and exciting results can be obtained in this way.

Whatever the degree of skill attained by the child, the following requirements must always be satisfied in this poster work:

1. Colours must be clear and simple.
2. A degree of symbolism and conventionalism is preferable to slavish attempts at representation.

3. Large size and clarity are essential.
4. Lettering must be proportionately large, simple, in good form, and legible.
5. The work must be well-mounted and finished, however simple. An adequate and well-balanced order can compensate for work inferior in other respects.

DRAMA LESSONS

AGE GROUP SEVEN TO EIGHT

THESE lessons are based upon improvisation and are planned to take place in a classroom. It should be understood that throughout the course the term "LESSON" often implies two or more periods of work.

Lesson 1

Suggest three subjects that could be acted by one person.

1. Calling across a river to friends telling them where the bridge is.
2. Directing a motorist to the next village.
3. Telling a group of children how to play a game.

Let all the children choose a subject and think about it for a few minutes. Then one by one let them act the little scene. The rest listen and help with suggestions.

2. A bus conductor sells a ticket to a passenger.

3. A milkman delivers milk and is paid for it.

Give help and suggestions when they are needed. Keep the scene simple. Make sure the words can be heard and that the gestures are clear. Tell the children not to "pad," or stray from the subject, and see that they economise words.

Lesson 3

In this lesson the children learn how to tell a story, so that it can be turned into a play later on. Everybody in the class chooses a word--*cat, thimble, book*.

Now let the children in turn place a word before the chosen one, telling what kind of thing it is. (A *little* cat; a *red* book; a *silver* thimble.)

We will choose *thimble*.

To whom did it belong? (The *old lady's* silver thimble.)

Now decide something that happened to it. (The old lady's silver thimble *was lost*.)

Where was it lost? (The old lady's silver thimble was lost in the *garden*.)

There we have the beginning of a story. The children think about it for the next lesson and decide on all the adventures the thimble had.

Lesson 2

This time give a subject upon which the children can work in pairs. The preparatory work can be done at their desks and they can speak together, but very quietly. When another person is involved there is give and take, and sympathy is needed to facilitate working together. The conversation has to be picked up one from the other.

Subjects:

1. Two friends meet after not having seen each other during the holidays.

Lesson 4

In the last lesson we decide to write a story and everybody made a beginning.